

PSYCHIC SCIENCE

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AN INTRODUCTION AND CONTRIBUTION TO
THE EXPERIMENTAL STUDY
OF PSYCHICAL PHENOMENA

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PUBLISHERS' NOTE

THE work of which this is a translation was originally published in French under the title of *La Psychologie Inconnue*. It is practically impossible to give an exact English rendering of this phrase, which is employed by the author as relating to the psychology of the purely psychic side of the human consciousness. Professor Boirac criticises the word "psychic" in relation to such matters, arguing that emotions generally can fitly be termed "psychical states," and that there is nothing in the word itself which justifies our restricting its application to extraordinary or abnormal phenomena. The expression, however, at least in English, has become during recent years so identified with these phenomena that no confusion of thought is likely to result. Moreover, since the foundation of the Society for Psychical Research, the phrase has become the obvious one, and indeed the only one which can be suitably employed—unless we choose to coin a special word for the purpose, such as "parapsychical," as suggested by Dr. Boirac, or "metapsychical," as preferred by Professor Richet. It seems dubious if either of these two expressions are likely to meet with any general acceptation, and in the meantime it has seemed best to give a title to the book which will most nearly convey to the English reader the precise nature of its contents.



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INTRODUCTION

SOME of the chapters of this book have already appeared in the form of articles in a number of reviews—*Revue philosophique*, *Revue scientifique*, *Revue de l'hypnotisme*, *Annales des sciences psychiques*, *Nouvelle Revue*, etc. They were all composed during the period extending from 1893 to 1903. In publishing them now in a revised form, and with the addition of a certain number of hitherto unpublished articles, we defer, though tardily, to the wish often expressed by the late Dr. Dumontpallier to see collected into one volume these various articles on questions of experimental psychology, the philosophic and scientific interest of which he undoubtedly valued too highly. We venture respectfully to dedicate this book to his memory.

It has not been our aim merely to make a random collection of Essays. We hope the reader will perceive that one idea runs through the whole of the work, and imparts a real unity to it. We will here try to explain this idea and bring its essential characteristics into prominence.

Is it possible to study scientifically the whole of the phenomena which to-day are carelessly massed together under the name of *psychical phenomena*? From certain indications it seems that the majority of contemporary scientists are less definitely resolved than those of the last

century to exclude them from the domain of science. But the conditions they regard as necessary for the pursuit of this study remained undetermined. Facts multiply and accumulate, but the question of method still awaits solution. So long, however, as it remains unsolved, so long as psychical phenomena are observed and experimented upon at random, no progress will be made, and it will always be possible for new investigators to doubt the validity of the results obtained by their predecessors. Psychical phenomena, in point of fact, apart from their mysterious character and marvellous appearance, are exceedingly varied and complicated. They form a kind of labyrinth which can be entered by a thousand different doors, but wherein we can only walk with assurance if we have taken the right way from the beginning.

The first problem to solve, therefore, is that of the order to be followed in the study of these phenomena. Accordingly, after having defined and characterised them, it is necessary to classify them.

In this classification they will be found arranged in order of complexity and increasing difficulty, in such a way that the knowledge of the first becomes the indispensable condition and the necessary means for the study of those that follow.

We may divide them into three great branches, or to speak more correctly, three classes.

1. *Hypnoid Phenomena*, which do not imply the hypothesis of any yet unknown agent, of any cause distinct from the causes already admitted by science, which seem possible of explanation by causes already known and admitted, but operating in new conditions still imperfectly or feebly defined. To this first group belong the phenomena of hypnotism and suggestion, which the *savants* of the eighteenth century first of all denied, but which those of the nineteenth ended by gradually admitting, and which are now regarded as scientific.

They belong to what M. Grasset, in a recent work, called “the occultism of yesterday.”¹

2. *Magnetoid Phenomena*, which seem to involve the hypothesis of causes still unknown and unclassified, but of a *psychical* nature, and more or less analogous to the radiating forces of physics, light, heat, electricity, magnetism, etc. In this category are placed all the phenomena of *animal magnetism* and *telepathy*, at any rate in so far as they are distinct from the phenomena of hypnotism and suggestion.

3. *Spiritoid Phenomena*, which seem to involve the hypothesis of agents yet unknown, but this time of a psychological character, more or less analogous to human intelligences, perhaps having their being beyond our habitable world, on a real plane external to that on which we live. Under this head are classed all the phenomena of *Spiritism* that cannot be included in the two previous branches.

At the present time science has almost taken possession of the first class, and although a rather large number of special questions still remain unsolved we may say that the essential principle is now known. That is doubtless the reason why many scientists wish to confine their researches to this group. They forget that the mistrust which they profess to have with regard to all phenomena outside these limits is identical with that by reason of which they formerly repudiated all those who ventured upon the very domain where they are to-day installed.

It must be admitted that before undertaking the study of the other two groups, it is absolutely necessary to know the first thoroughly, because the phenomena of the first are assuredly found in the other two, and the great difficulty is to determine exactly the extent to which these first should not be included in the other two. But on the other hand it is none the less indispensable

¹ *L'Occultisme hier et aujourd'hui*, by Dr. J. Grasset, Paris, 1907.

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to have continuously before the mind the principal types of facts included in the last two branches with their tremendous complexity, in order not to be tempted to the belief *a priori* that they are immediately reducible to those of the first class, or that this reduction can be made by a purely abstract method, that is to say, by an exclusively logical discussion and not by continual recourse to experiment.

One chief reason why progress in this class of research has hitherto been so slow and uncertain, is that among those engaged in it, some, systematically confining themselves to the study of the phenomena of the first group, have ignored almost entirely those of the other groups, or only glanced at them in a vague and superficial manner, in any case never including them in their personal investigations; whilst others, lacking the instruction and necessary scientific training for the analysis of such complex phenomena, have undoubtedly been in possession of a large number of facts belonging to the second and third groups which they have observed and personally investigated, but at the same time have been incapable of seeing the preponderant part which those of the first group have played. Thus there has been no effective communication between the *savants* on the one hand, who had resolutely limited themselves to the consideration of hypnoid phenomena; and the *magnetisers*, *occultists*, *spiritists*, etc. on the other hand, well informed upon a multitude of interesting magnetoid and spiritoid facts but poorly qualified to study them methodically.

Nevertheless, in recent times, the attention of some men of science has been directed to telepathic and spiritistic phenomena, and the scientific world, as a whole, has begun it seems to admit that serious interest may be legitimately taken in the study of these phenomena. The time therefore seems to be at hand when science will take possession of this domain hitherto regarded as

forbidden ground for such researches, and will undertake to explore it according to its usual methods.

It seems to us, however, that the first steps taken on this ground have not been in the proper direction. We have been particularly concerned with studying the most extraordinary phenomena, those which in the highest degree excite the curiosity and stimulate the imagination ; that is to say, on the one hand, spiritoid phenomena under the strangest forms, such as have been reported by Sir William Crookes, de Rochas, Richet, etc., and, on the other hand, those magnetoid phenomena, the mechanism of which is most obscure and certainly most complicated, namely, the phenomena of telepathy which the Societies for Psychical Research, both in England and America, have collected with such patience. But these same phenomena further present this common characteristic of being almost exclusively spontaneous ; they may doubtless be observed when opportunity offers, but they cannot be called forth at will, can only very rarely be modified and consequently are precluded from experimentation. We would compare the position of *savants* confronted with phenomena of this character with that of savages, otherwise intelligent, who, confronted by our most complicated electro-magnetic apparatus, telegraphs, telephones, etc., try to understand their working merely by observing their effects in complete ignorance of the elementary laws of electricity and magnetism.

Thus in our opinion it is first of all necessary to postpone the systematic study of the phenomena of the third section until such time as those in the second category shall have been explored sufficiently for us to determine their true causes and principal laws. That does not mean, let us state, that we ought to abstain from observing and noting with the greatest care these phenomena every time they occur, but we must not regard that sort of preliminary enquiry as having any real scientific

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import, and, particularly, we should not regard it as sufficient to create and justify a rational explanation of the whole of this order of facts.

The attention of researchers ought, therefore, to be especially, though not exclusively, centred upon magnetoid phenomena.

At the present time, scientists have almost accustomed themselves to regard this section as non-existent, even those with the most open minds, those who are most favourably disposed to the study of the phenomena known as psychical, ignoring or not recognising these necessary intermediate facts between hypnotism, with which they are more or less familiar, and spiritism, which they have commenced to handle and tentatively investigate.

That attitude has doubtless led to the creation and maintenance of the prejudice by the Paris and Nancy schools against animal magnetism, and to their acting as though it is possible to know nothing more than the phenomena described by Mesmer and his successors, the studies by Braid and Charcot, Liébault and Bernheim. In other words, almost all admit as an axiom that the discovery of hypnotism by Braid and that of suggestion by Liébault have definitely undermined the hypothesis of animal magnetism.

But, as we shall try to show in the principal chapters of this work, nothing is more false than this pretended axiom. The experiments necessary to prove it have never been made, and, as we have satisfied ourselves experimentally, such experiments as have been made prove exactly the contrary, namely, that animal magnetism has its own real effects in experimental conditions where hypnotism and suggestion have been rigorously excluded.

It is true that the whole of one branch of magnetoid phenomena has recently been the object of numerous

researches, as we have already remarked. But *telepathic* phenomena taken by themselves, that is to say, abstracted from the relationship in which they stand to the general phenomena of animal magnetism, have absolutely escaped all scientific investigation. They can, indeed, be observed and records of them collected *ad infinitum*, but it is impossible to test them by experiment, impossible indeed to imagine conditions under which they could be so tested.

The most urgent task, unless we choose to deny its possibility, is the absolute, complete and impartial revision of the process of animal magnetism. In this, and this alone, lies the key to all subsequent problems (telepathy, mental suggestion, externalisation of sensibility and motricity, the phenomena known as the physics of spiritism).

How ought this revision to be effected ?

If we examine the manner in which scientists have hitherto treated the question we see that they have generally abstained from themselves carrying out observations and experiments for checking the hypothesis denied by them. They have always waited for the facts to be brought to them instead of seeking them for themselves. These facts are always known to them only in an indirect manner by witnesses, not by personal verification; sometimes even when it has been proposed that they should make these investigations, they have refused or, if at the outset they have proved a negative result, they have hastily concluded that it would be useless to go further. In any case they oppose to these facts, not other facts but purely *a priori* objections.

Nothing is more contrary to the true scientific method : in no branch of science would progress have been possible if similar treatment had been applied. It is by experiments and not by arguments that the whole study of animal magnetism must be re-created *ab integro*.

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This study necessarily involves some special conditions.

In the first place there are certain precautions to be taken, and this is a point on which too much insistence cannot be made. In point of fact, the majority of magnetoid phenomena are what Durand (de Gros) calls *polyétiques*; they are typical illustrations of what we ourselves have called the *inter-substitution of causes*. It is important in all experiments of this character to take all possible measures to exclude or eliminate subsidiary causes.

Of these causes the principal, the most insidious, the most difficult to trace, at least, in the experiments made with human subjects, is that of suggestion. All arrangements for experiments bearing on animal magnetism ought then, before anything else, to be *non-suggestive*, or to put it better, *anti-suggestive*. We shall, during the course of our work, lay down the general rules to be followed in order to obtain this result. From this point of view nothing is more different from the experiments made by the hypnotisers of the Paris school or the suggestioners of the Nancy school than experiments such as we conceive them and as we have made them ourselves for the proof and development of the hypothesis of animal magnetism. They consciously or unconsciously employ suggestion as the principal or even the only means, but not only do we not make use of suggestion intentionally, but our constant anxiety is to close all issues whereby it may enter unobserved.

In the second place, the principal characteristic of the method to follow in this order of research is, in our opinion, the continual and regular use of experimental hypothesis and experimental reasoning, as they have been defined by Claude Bernard in his *Introduction à l'étude de la médecine expérimentale*. Hitherto the majority of the so-called experiments made in this domain, by scientists as well as by magnetisers, have been really only *observations*;

they have doubtless been more or less induced but they have missed the essential element of real experimentation, namely, the preliminary organisation of observations thus induced in view of the immediate verification of an hypothesis. What in point of fact constitutes the true experimental method, that which distinguishes it from the *empirical method* with which we too often confound it, is not only, nor even particularly, as we have been led to believe, the personal intervention of the investigator in the phenomena which he observes, but the presence in the mind of the investigator of a preconceived idea which must be limited by the conditions sufficiently precisely for the facts in some way to respond by "yes" or "no" to the question propounded. Such a method may give to reflection and deduction a part as important as observation, properly so called, but the last word is always given to observation.

In the present case the hypothesis to be tested is that of animal magnetism. But is it necessary to construe this hypothesis in the same manner as its partisans have done from the time of Mesmer down to our own contemporaries who follow in his footsteps? For them this hypothesis is a theory constructed more or less *a priori*, almost entirely systematised, and in which they seek the explanation of a larger or smaller number of facts already known. For us, it is simply a directing idea, very general, very undetermined, and which ought only to serve us for devising new experiments in order to anticipate in some way facts not yet known. We do not, therefore, try to fix it beforehand down to the smallest details, because it is from experiment that we look for some progressive determinations of this hypothesis. We leave it at the outset in the state which experiment has suggested to us, that is to say under the form of this simple postulate: "The human organism is

susceptible of exercising at a distance an influence on other organisms, perhaps even on material objects, an influence more or less analogous to that of radiating forces, such as heat, light and electricity."

We may, it is true, try to state this hypothesis logically and precisely by utilising the scientific knowledge we already possess of these radiating physical forces and by drawing a conclusion from an analogy of their properties with those of animal magnetism. But if this method is to have any useful purpose, it can only be when employed subsidiarily in proportion to the successive steps of experimental research and with the exclusive purpose of suggesting new arguments to lead up to new experiments.

In fact the general hypothesis of animal magnetism, in order to play a real experimental part, ought to be resolved into a number of hypotheses, more and more specific, and such that each of them may be directly submitted to the test of a suitable experiment. These are special hypotheses, each in particular of interest to the scientist, because each one is capable of verification, the elaboration of which will almost necessarily result from the concurrence of the following two factors,—on the one hand facts which are manifested with increasing diversity and precision in the course of observations and experiments, and each of which will in some way shift the investigations into a more and more definite direction; on the other the physical laws already known, and doubtless also the physiological, from which we can draw by analogy some deductive applications, of a hypothetical character, it is true, but suggestive of experiments which can be tested by them.

In this matter, more than in any other, the student ought never to lose sight of this great truth which dominates all the logic of experimental sciences:—

"A fact is only of scientific value in so far as it suggests

an hypothesis or tests it, and, reciprocally, an hypothesis is only of scientific value in so far as it is suggested by facts and is verifiable by them."

As a result of all the facts we have collected in the course of our personal experimentation are we not already a little less vague and uncertain as to the part played by animal magnetism? Unquestionably so; and the result encourages us to enlist the attention of men of science and the public generally.

First of all it is right to recall here that which we call the two cardinal experiments of animal magnetism, the first of which proves the existence and the second the conductibility of magnetic or psychic force.

FIRST EXPERIMENT.—A blindfolded subject is informed that he must, without being asked, state all the contacts he feels, and in a general way, all the sensations he experiences. An operator, without speaking, places his hand before some part of the subject's body at a distance of from two to four inches. A third person, without speaking, taps the subject's body with a small rod in various places, including the part covered by the operator's hand. At the end of a very short time (thirty to sixty seconds) the subject begins to enumerate the percussions made at all parts excepting at the part covered by the hand. If a neutral individual (one not exercising magnetic or psychic influence) takes the place of the operator, and places his hand in the same position, the subject mentions all the percussions without any exception.

The result of this first experiment is, at least, to draw the hypothetical inference, to be verified by subsequent experiments, (1) that the human organism radiates at a distance, at least through the hand, an influence capable of acting on another organism, that of the subject, and can there produce an observable modification, to wit, anesthesia; (2) that this influence does not emanate

from all human organisms, or at least does not emanate from all with sufficient force to produce an observable effect.

SECOND EXPERIMENT.—A subject is placed in the same condition as before and a neutral subject operates in the same way as already described. When it has been proved that the influence of this person is practically *nil*, that is to say, does not produce any observable effect, an operator is placed in contact with this neutral individual either by clasping his hand or in some other way: we then observe that after from thirty to sixty seconds, or a little longer, the subject omits to mention the touches made on the part covered by the hand of this neutral person. The result of this second experiment is to draw the hypothetical inference to be confirmed by subsequent experiments: (1) that the force radiating from active individuals is actually received by neutral persons and passes through their organisms, although it is not manifested by any observable effect; (2) that it is transmitted through these neutral individuals and, after passing through them, preserves the property of influencing the subject and produces an observable effect, namely, anesthesia.

We shall not try to show here all the deductions that may be drawn from this double experiment, but content ourselves by indicating the principal.

First of all, our conception of animal magnetism is found to be not only confirmed, unless the contrary can be proved, but even elucidated and determined. We have, in point of fact, authority for thinking that if this force exists it does not exist in the same degree in all individuals of the human species, and in many of them it appears to be absent. Further we are led to look upon it as diffusible in an extraordinary manner, as it instantaneously traverses all bodies without producing any appreciable effect, and from this we can even conclude

its perfect conductibility, since it is conducted from the operator to the subject by the intermediary of a neutral individual (and, perhaps, also, as other experiments may confirm, by all bodies through which it is diffused).

We may also assume from this double experiment a third classification of human beings, viewed from the special standpoint of animal magnetism. It is in fact, clear that they may be divided into three classes : (1) *Operators*, or *active* or *radiating* individuals, that is to say, all those who regularly emit psychic force; (2) *Neutrals* or *non-radiating conductors*, who do not emit psychic force but who allow it to pass and are able to transmit it without appreciable modification; (3) *Subjects* or *passive, non-radiating non-conductors* or *insulators*, who, not emitting psychic force, receive it and manifest the effects, since they arrest and accumulate it, perhaps even transform it in concentrating it.

Let us suppose these individuals summarised in the following table :—

1. *Radiating-conductors* : Operators.
2. *Non-radiating-conductors* : Neutrals.
3. *Non-radiating-insulators* : Subjects.

Argument shows us that it is possible to conceive of a fourth class, which would be that of radiating-insulators. But as we shall see in the chapter on *Human Radiations*, this class seems to correspond in practice with that of *Mediums* for physical effects, supposing, that is, that these results can be scientifically proved.

Necessarily all these deductions themselves raise an infinite number of minor questions which can only be solved by a long series of new experiments. For example : What is the difference between operators and neutrals ?

What part is played by the nervous system, brain, nerves, skin, circulation of the blood, respiration, nutrition and perspiration in the emission of this magnetic force ? Is this radiating emission made equally in all parts of the body ? Has it any special centres ? Can it be increased or decreased at will ? Can it be artificially modified by drugs or physical actions, either with the aid of external multipliers or condensers (the influence of water, dry air, humid air, electricity, physical magnetism, etc.) ? Is it varied by health, sickness, age, sex, etc. ? Is it equal in all who possess it, and if not, how can it be measured ? Is it possible to add to it and combine the radiating activities of two or more operators ? etc., etc.

Some similar problems arise with regard to neutrals and subjects. How is the force transmitted ? Through the whole organism or only at the surface ? What part is played by the nerves, skin, etc., etc. ? Also what is the relative receptivity of subjects with regard to magnetic influence ? To what extent can it be produced, suppressed, artificially modified ? etc., etc.

If we now look not only on the phenomena of the second order but at the whole of the phenomena called psychic, and particularly those of the third order, a very general problem is placed before us, namely, that of the *Unity of Psychic Force*.

We may, and in fact we must, ask if it is not one and the same force which intervenes in various ways, but with inter-connections, in all the phenomena of hypnotism and suggestion, animal magnetism and telepathy, and finally, spiritism or mediumship.

Like all others, this problem can only be solved by a long and patient resort to the experimental method. But this method involves our beginning by giving it a provisional and hypothetical solution. The solution which, up to now, seems to be suggested by the facts (particularly

those of the second and third groups) is that, moreover, which is most favourable to future experimental investigations. It is that this force is one, although susceptible of presentation under various modalities.

In that case there would be occasion to distinguish methodically these various modalities and determine the conditions in which psychic force may pass from one to another, a stupendous work which we commend to the experimenters of the future.

All that can be said to-day is that there is doubtless ground for distinguishing between the following principal modalities :—

1. *Internal* modalities, or psychic force remaining confined to the interior of the organism, which correspond to the phenomena of the first group (hypnotism and suggestion).

2. *Internal-external* modalities, or psychic force externalised in order to pass from one organism to another, and which correspond to the phenomena of the second group (animal magnetism and telepathy).

3. *External* modalities, or psychic force projected outside the organism into material objects, or itself created from such objects, and which correspond to the phenomena of the third group (mediumship).

It may also be supposed that these different degrees of externalisation correspond to the correlative degrees of condensation of psychic force : and that is the hypothesis we have ourselves outlined in the chapter on *Human Radiations*. From the state of absolute fluidity and diffusibility, which would be its starting point, it would, by successive transformations, reach a condensation sufficiently intense for it to become, under conditions yet unknown, not only visible and tangible, but actually material.

Be that as it may, all these hypotheses may be profitably postulated, provided they only serve as instruments

for future experiments. Yet once more, there is no experimental method without hypothesis.

We have pointed out the task. Here is the field laid bare. May the labourers not be wanting. A harvest of so fair a promise should well repay the effort it entails.

PART I

PRINCIPLES, METHOD AND CLASSIFICATION OF FACTS

CHAPTER I

CRYPTOID PHENOMENA

BACON in his *Novum Organum*¹ recommends the student to observe indifferently all facts presented to him, but to reserve in some way his interest and attention for the really significant and instructive facts which he calls privileged or prerogative facts (*praerogativaे instantiarum*) and among these facts, of which he reckons twenty-seven kinds, he accords almost the first place to ostensive (or predominating) instances (*instantiae ostensivae*). These are those in which the property or cause in question is shown openly, freed from all obstacles and at its highest degree of power. Bacon gave the magnet as an example, where the attractive force is thus made conspicuous, and he opposes to these what he calls clandestine or twilight instances (*instantiae clandestinae et crepusculi*). "These exhibit the property under investigation in its lowest degree, and, so to speak, in its cradle making its first efforts and attempts, but lying hidden and overcome by a contrary nature." He gives, as an example, cohesion in liquids.

It seems to us that by taking a more general point of view we can divide all natural phenomena into two great classes to which we may also appropriately give the names of *ostensive* and *clandestine*, which would only be enlarging the sense, as we shall presently explain, and it also

¹ *Novum Organum*, Book II, Part XXI and following.

seems that this distinction in the present state of our knowledge and research would be of very great scientific and philosophical importance.

I

Much criticism, in the name of science, has been passed upon that anthropocentricism of human intelligence, which, for a long time, has imagined that all things were specially made for the use of man and the satisfaction of his desires. However, the same scientists that are pleased to show how illusory was this pretended finality of nature in respect to our practical activity, little suspected that they were the dupes of a similar illusion when they regarded nature as necessarily pre-ordained with regard to science itself. Things exist in order to be known, and even to be known scientifically, by man; we may call this the initial postulate of human science; and in this postulate, when we examine it without prejudice, we recognise an application of the principle of finality, quite as ingenuous as that which serves as the base of the primitive religions of humanity; the earth, the centre of the world, and man the end of creation.

It is necessary, moreover, to state that this postulate is almost inevitably imposed upon us by our mental constitution. On the one hand, intelligence like all natural forces, obeys without doubt that law of conservation to which Spinoza gave the celebrated formula: "All that is tends to persevere in its being." But for it to persevere in its being is for it to exercise its own action, namely, the acquisition of knowledge, and to exercise it indefinitely. From that springs its confidence in universal intelligibility. "Every being" as M. Rabier admirably said:¹ "every conscious force is naturally full of confid-

¹ *Leçons de philosophie Psychologique*, p. 400.

ence in itself. Intelligence, which had already rendered intelligible a certain number of phenomena, believes, and ought naturally to believe, that everything can be rendered intelligible to it, that it holds the secret of everything, the key to everything, that the world was made for it, and that it has the power to assimilate it. It then spontaneously believes in this principle of universal intelligibility, because it naturally believes in itself. Thus, as Aristotle said, "the young man, before the experience of life has humbled his pretensions, is full of vast hopes. He is like the bird that, having just put its wings to the test, thinks that it will fly up to the stars."

On the other hand, intelligence finds in the organism a certain number of natural instruments which appear to have been made in advance and as though prepared to put it into relation with things and give it immediate knowledge of them: we speak of the senses. Does it not seem as though taste, smell, hearing and particularly touch and sight, have been combined by benevolent nature in order to reveal to us the existence and various properties of all the objects that surround us? All that we can see and touch really exists and that which is neither visible nor tangible has no real existence; these are two propositions which, certainly to the majority of men, pass for common-sense truths; but, in fact, these pretended axioms have every claim to figure in the front rank of a vast class of natural and universal prejudices.

Our senses, it is true, have been produced and fashioned by things themselves and, from this point of view, it is not very correct to regard, with Descartes, all perceptions that they procure us as entirely subjective and arbitrary. With other senses, we often say, we should perceive things quite differently. But, perhaps, we should have other senses if things were other than they are; and in that case it would be quite simple for them to be for us the object

of other perceptions. However, whatever part things may have played at the genesis of our senses, the principal factor of our evolution has certainly been utility, not intellectual but vital.

“The senses” M. Fouillée says in his *Psychologie des idées forces* (Vol. VIII, p. 5), “have been organised by way of progressive adaptation, not in order to serve intellectual and speculative knowledge, as Plato speaks of them, but in order to respond to the very practical wishes of the appetite and ‘will-to-live.’ The eyes are not formed for contemplation, but in order to give warning of danger and facilitate the taking of prey; we cannot even say that they are formed in order that we may see, but rather in order that we may foresee pain or joy, and to enable us to act. All the organs of the senses are means of accomplishing the movements of flight and pursuit, which themselves have, as their final end, the flight from pain and the pursuit of pleasure.”

This explains the predominance of one sense over another in certain animal species. For example, the predominance of sight and touch over all the other senses in the human species, can have no connection with the value of this sense as an instrument for the scientific knowledge of things, but is related to some peculiarity of the structure of this species or some accident in its evolution. Suppose a race of beings as intelligent as man, in whom smell was the predominant sense, as it appears to be in the dog. In all probability in that race smell would be the measure of reality, and it would be readily admitted as an axiom that anything which had no smell did not exist.

The mistake of ordinary people has, moreover, been shared by the greatest philosophers. Thus Aristotle taught that if we have five senses it is because there are five distinct and irreducible properties in objects, which he calls the sensitive characteristics, each of which cor-

responds to one of our senses : the colour, sound, odour, savour and tangibility of his famous aphorism : one sense less, one science less. The doctrine of Aristotle reigned uncontradicted in philosophy, up to the time of Descartes. That anything can exist without being able to manifest itself to any one of our senses was a supposition that a doctor of the Middle Ages would have declared absurd *a priori*; it was a principle admitted in the Schools, and one prohibited from discussion, that between the non-existent and non-appearing there was no difference : *non existentibus et non apparentibus eadem est ratio*.

We allow ourselves to-day to be guided more or less unconsciously by this old prejudice. Phenomena are for us synonymous with facts or natural events, as if nothing was made or happened in nature which was not able to appear to us or show itself to us in some way, and we have scarcely yet begun to realise with some contemporary thinkers that "in the inaccessible regions of space around us and in us, there may be, and indeed are produced some orders of phenomena, on which as yet no light has been shed, which no sagacity has ascertained, and yet of which knowledge is necessary in order that we may have a just explanation of things."¹

II

In our day a kind of revolution seems preparing in the general conception that science has hitherto held of natural phenomena; and this revolution consists in admitting two orders of phenomena, the one ostensive, to apply Bacon's term, but in a more general sense,

¹ L. Bordeau, *Théorie des Sciences*, Vol. II, p. 624. Compare Prof. Richet: "It is a thousand times certain that we pass by the side of brilliant phenomena, which we do not see, neither do we know how to observe them, nor how to produce them."² *Revue Scientifique* 1890.

which Nature seems to have predestined to serve as objects for our knowledge and study, the only ones, almost, that scientists have hitherto taken into consideration; the other, which we may call clandestine or cryptoid, that Nature seems to have concealed purposely from our usual methods of investigation, though in the future we must, accustom ourselves to conceive them and to admit their reality.

Two causes are contributing to this change of ideas.

The first is the extraordinary series of discoveries which have followed each other in close succession in the second half of the nineteenth century, and which suddenly revealed to us some hitherto unknown phenomena in those regions of nature which we thought had been entirely explored and thoroughly penetrated; the second is the influence of philosophical doctrines emanating from Descartes, Leibnitz and Kant, which have increasingly familiarised minds with metaphysical notions of the infinity of the universe and the relativity of human knowledge.

The commencement of the nineteenth century saw nearly all the natural sciences definitely constituted, and at last in possession of their objects and methods; and as long as this phase lasted, scientists believed that there remained nothing else to do than to develop in an orderly manner the results already acquired; they thought that all the limits had been defined, the work required was simply filling in details, but it was never supposed that these limits would not suffice for the reception of all the future developments of science. The curiosity of the human mind seemed to be confined for ever within certain barriers which in all good faith were looked upon as the confines of reality. No savant of the time of 1830 to 1848 would for a moment have thought of writing such lines as the following, which were penned in 1892, and which show clearly to what degree the

scientific spirit had developed in the second half of the nineteenth century :—

“ We are forced to believe that general physics, which is perhaps the base of all science, is constantly enlarging, that it is in a state of perpetual becoming and that we cannot regard as the last word in human knowledge either the dynamic theory of heat and electricity or the theory of the permanence of force or the theory of attraction. These are great and admirable laws, but without falling into dreamland we may suppose that they will one day be dethroned by yet other and more general laws. In fact, nothing warrants us to claim that we know all the laws of nature. Far from that, it is probable that some forces only are known to us, whilst others remain hidden. What should we know of electricity if Galvani and Volta had not made their experiments ? What could we say of magnetism if the magnet had not existed ? It is, therefore, almost certain that there are forces hidden in nature that we cannot see and which chance or the genius of man will eventually discover.”¹

How indeed, would not this conviction be impressed upon every student who reflected when, for example, he saw all the medical sciences reconstructed from top to bottom by Pasteur’s discovery which no physicist anticipated before 1860, and which, on its appearance, found infinitely fewer partisans in learned circles than opponents ? The existence of microbes was scarcely suspected : to-day we know that they are everywhere and that nature has no more energetic agents.

Is it necessary to recall here the transformation in astronomy which resulted from the discovery of the spectrum analysis, thanks to which we know the chemical constitution of the most remote stars more correctly than that of our own planet ? The still more recent discovery of the Röntgen rays has suddenly opened to physicists

¹ Ch. Richet, *Dans Cent Ans.* (*Revue Scientifique*, March 12, 1892.)

a door unperceived until then, behind which was hidden a whole group of phenomena which on the eve of the discovery we should not have hesitated to have declared *a priori* to be impossible. Finally, we have come to learn that the air, the composition of which had been so often analysed by so many savants concealed, notwithstanding, four gases absolutely unknown—argon, crypton, neon, and metargon, and we are unable to say now that the list is finally complete.¹

III

On the other hand, modern philosophy has come by various routes to the conclusion that the knowable is not the complete reality, but only a part, or, to speak more correctly, an aspect of the reality.

Descartes doubtless accorded absolute value to rational knowledge, based on clear and distinct ideas, but he plainly professed the relativity of sense knowledge. Our senses, according to him, do not make us grip the true nature of things, which is entirely geometrical and mechanical; they only instruct us as to their general modifications; and, for that even, they give us but an indirect and imperfect knowledge of the phenomena of the external world. Of the infinity of figures and movements that the material expanse is susceptible of receiving, they only reveal to us an infinitely small part under the illusory appearances of sound, light, heat—in a word of the different sensible qualities. Matter, not having assignable limits, either in space or time, realises infinitely more phenomena than we are able to observe, than we can even conceive; and that is why Descartes regarded the field of natural possibilities as unlimited;

¹ Since these lines were written the sensational discovery of radium has still more astonished the world.

our imagination could not invent any marvel that the mechanism of nature would be unable to execute.¹

Spinoza seemed at first to promise us the integral and absolute knowledge of existence : did he not claim to deduce mathematically all truths from the three definitions of substance, attribute and method ? But as substance is infinite, it necessarily contains an infinity of attributes infinitely modified ; and yet, from all these attributes of substance, in number infinite, two only are known to us, extent and design. Therefore, parallel with this world of bodies and souls where we live, which alone is open to our inspection, an infinity of others exist which are absolutely closed to us, and of which the models are not less inseparable than those of ours from the indivisible unity of universal substance. Thus even in the very centre of Spinoza's system, there yawns an abyss into which the mind cannot look without becoming giddy.

In short, Descartes and Spinoza placed the infinite outside ourselves ; Leibnitz made it enter within us ; he internalised it, may we say. Each soul, each monad, each element of things enveloped in itself the universality of past, present and future phenomena. Not a point in the universe which may not be in active dynamic communication with all the others. Without departing from my individual sphere, it will be enough for me to descend sufficiently deeply into myself in order to see unrolled the whole drama of universal life. What does that mean but that my express and distinct consciousness, my *appereception*, only illuminates the surface of my being, and that a world of latent perceptions swarms behind those I perceive ? By that is introduced into philosophy the paradoxical if not even contradictory notion of sensations which are not felt, of thoughts of which we are without knowledge ; and at the same moment psychological perspectives are drawn out to

¹ See *Les Principes de la philosophie*, V, 116, 187.

infinity ; limited till then to the first planes of conscious life, they are prolonged in the future till lost to sight in the mysterious regions of the subconscious and the unconscious.

From yet another point of view Leibnitz may be accounted one of the most important promoters of this new manner of looking at things. We refer to his hypothesis of monads to which many contemporary thinkers seem to come as the last resource of the human mind in quest of a fundamental explanation of the universe.¹ Whilst atomism invites us to conceive of the hidden principles of natural phenomena with the same characteristics as the phenomena themselves, that is to say, being like them extended, formed, materialised (at least, to our imagination, if not to our senses), monadism constrains us to suppose them absolutely heterogeneous in respect to the material world, without extent, without form, without any of the properties, thanks to which things become sensible or imaginable to us, so that we ought not even to try to represent them objectively, to see them or touch them even in thought, under penalty of causing them to vanish immediately. But if that alone is knowable from the scientific point of view, that can at the same time be intellectually constructed in the limits of space and time and verified experimentally by the senses of sight and touch, does not the Leibnitzian hypothesis of the monads come to this—that the last elements of things, *things in themselves*, are impossible to know scientifically, with a really objective and universal knowledge? Kant has not hesitated to draw this conclusion: he has resolutely transformed the monads into noumena.

From the *Critique of Pure Reason*, the thesis of the relativity of human knowledge has passed into current

¹ Hannequin, *Essai critique sur l'hypothèse des atomes dans la science contemporaine*. (F. Alcan.)

usage in philosophy and contemporary science; it has almost become one of the commonplaces of the thought of our age; and it is thus that Spencer has put it at the base of the system in which he has endeavoured to confine in a colossal synthesis all the results acquired, or even simply hoped for, from scientific work up to the present day. Under the infinitely varied forms of phenomena is hidden an unknowable reality, the substance and cause of universal evolution.

In any case if this metaphysical conception of the unknowable, of the noumenon or of the *thing in itself*, can open the way to cryptoid phenomena, it yet differs essentially from it, precisely because it is metaphysical and not scientific, because it is concerned with absolute realities, with transcendental conceptions and not with facts or phenomena of the same nature at bottom as the others, appertaining to the domain of positive science, although situated in a part of this domain infinitely less accessible to our customary methods of investigation. In other words, contemporary science is on the way to assimilate the metaphysical conception of the Unknowable, but by adapting it to its proper object which is and remains the phenomenal world; and by that means from the absolute Unknowable of the metaphysician it makes a relative Unknowable. At the same time it both limits and fills in this concept. To that which was only a purely formal negative and empty opinion, it gives, as we shall presently show, a positive and concrete content.

IV

It may be alleged, it is true, that our contemporaries have done nothing but recover and honourably re-establish a conception already ancient, but obstinately misunderstood and disregarded by scientists as well as by

philosophers, by all those, at least who pretend to represent true science and philosophy, we were going to say, officially and classically. Have there not been at all times mystics, theosophists, magicians, etc., false philosophers and false *savants*, in the eyes of official scientists, who maintained the existence in nature of a whole order of special phenomena, supernatural even in one sense, that science, in any event, cannot know or control by its ordinary methods of observation or experimentation, phenomena essentially mysterious and occult, which seem to constitute a world apart from the universal world of phenomena, to which there ought to correspond in consequence an order of distinct sciences, the order of sciences called *occult*, by the side of, and above, the sciences called positive ?

We do not know if the imaginations and pretensions of occultism have had, in point of fact, any influence on the enlargement of the conceptions of contemporary science; but even if that should be so, it does not follow that we are assisting to-day at a pure and simple rehabilitation of so-called *occult* sciences. The work of transformation that science is performing in the metaphysical conception of the unknowable, it is also performing, we may say, in the mystical conception of the occult, and under its influence, both are tending to become rational and positive. There is no question of restoring astrology, alchemy and other pseudo-sciences of antiquity and the middle ages; but simply of enlarging the true sciences—modern sciences, based on experiment and calculus, in such a way as to include all orders of phenomena, visible or invisible, ostensive or clandestine. It may be that science in thus widening itself, will recognise the reality of certain phenomena that she had formerly looked upon as imaginary and chimerical, but that must certainly only be after submitting them to her certain and rigorous methods of investigation and control.

Nothing prevents us from subscribing with this reserve, to the judicious reflections of Mme. de Staël expressed in 1814 in her work *De l'Allemagne* on the probable modifications of scientific ideas during the nineteenth century.

“ Those things we call errors and superstitions belong, perhaps, to universal laws still unknown to us. May not the relations of planets and metals, the influence of these relations, even oracles, and omens find their cause in occult powers of which, as yet, we have no conception ? And who knows if there is not a germ of truth hidden in all the fables and beliefs which have been branded with the name of folly ? It assuredly does not follow that the experimental method, so necessary to sciences, must be renounced, but why should not this method be guided by a more extended philosophy embracing the universe as a whole, and refusing to despise the *nocturnal side* of nature whilst waiting for its illumination ? ”

If, therefore, we understand by occult phenomena some miraculous supernatural phenomena not connected in a constant and regular manner with the whole of the forces and laws which constitute our universe, but formed, as a second nature, on the margin of the other ; it is clear that to admit the reality of such phenomena is not to extend the limits of science, but rather to come out from its domain. If phenomena of this description, were possible there would be for science not an open door to new spaces to explore, but, on the contrary, a closed and unsurpassable wall. We ought to regard cryptoid phenomena as obedient to the universal and supreme law of all phenomena, that is to say, to the law of causality ; however, incomprehensible and capricious they may appear to us, they too are included in the system of natural determinism. The flux and reflux of the same conditions carry them to and fro with an invariable regularity. It is in their connection with us, not in

themselves, that they differ from the more sensible and constant phenomena.

V

But it is undoubtedly insufficient to characterise cryptoid phenomena in a general manner; it is necessary at the same time to try and enumerate them and classify their principal species. In so new and delicate a subject we only set forth the following as a very imperfect and rough outline.

We can, first of all, admit into the first group some existing phenomena, which occur with great frequency or even continually and regularly in this universe, but yet which are for us as though they did not exist for want of a reactive or special developer, so that normally we have no means of recording or even perceiving them.

The weight of the air would have been included by the ancients in this category. Such also would have been the case with electricity, when men did not know how to produce and artificially accumulate it, as we shall show in the following chapter.

If chance had not placed in the laboratory of the physicist Röntgen some bodies of a certain kind in a certain order in proximity to a Crookes' ampulla crossed by an electric current, we should still be ignorant of the X-rays and the property they possess of traversing all opaque bodies with the exception of metals.

A more simple example may be drawn from the spectrum rays in the regions of the ultra-red and the infra-violet, which are only indirectly known to us by some of their chemical and physiological effects.

Photography is entirely based on the fact that some pictures at first invisible and transitory may be imprinted upon certain substances, then rendered visible and permanent by means of other substances reacting on the

first. The German professor Möser, in a communication made to the Academy of Science in 1842¹ has maintained that any two bodies constantly impress their pictures on each other, even when they are placed in complete darkness. Thus engravings framed under glass often leave a reproduction on the glass; in order that this transference of the picture may become visible, it is sufficient to project a vapour on to the glass, for example, the human breath, the vapours of mercury, iodine, chlorine, etc.

Cases of this class abound in physiological and psychological phenomena.

Thus it is that all our emotions, efforts of the will, thoughts even, are accompanied by imperceptible motions in our muscles which express them faithfully as they develop and modify themselves; generally we have not the least suspicion of them, but experiments such as Chevreul's pendulum at once bring them to light. A contemporary physiologist, M. Gley has been able to study this minutely, thanks to the use of special recording apparatus, and we know how it has been utilised in order to produce the apparently inexplicable phenomena of thought transmission or thought reading.

Here is a sick person, an hysterical subject, who apparently experiences no sensation when touched, pricked, pinched, etc., in any part of his body, he executes various movements with his hand, arm, etc., and if he is not able to see them he seems to have no consciousness of them. However, by an ingenious use of the special developer, *automatic writing* M. Pierre Janet has demonstrated that these sensations as well as these movements, have really been experienced by the consciousness, but both have become cryptoid, in a similar manner to watercourses which suddenly disappear but yet still continue to run

¹ *Comptes rendus de l'Academie des Sciences* 1842, Vol. XV. Compare the recent experiments and hypotheses relating to the radio-activity of bodies.

underground at such depths that only the skill of engineers can overtake and recover them and then with much difficulty.

It may also be observed that the effect of operations known as magnetic or hypnotic are often cryptoid in the sense that they are only made evident after the event by certain special developers, most frequently by suggestion through word and sign. The following example of this fact is taken from Professor Richet's work *L'homme et l'intelligence* :—

“ The person I tried to put to sleep apparently did not feel anything of the passes made for a period of two minutes. She was quite awake and realised the futility of my efforts. But after I had held her arm it became impossible for her to bend it. I was able to control the sterno-mastoid system, the motor muscles of the ocular globe, move the fingers, etc., in the same way. She could be compared with a talking doll because her stiffened limbs could only make jerky movements.”

The same thing oftens occurs with the Braidic process (prolonged gazing at a brilliant object or a mark) as Durand (de Gros) so ably demonstrates in his work from which we take the following extract :—

“ Braid's method has the immediate effect of making the subject fall into an anomalous physiological condition *sui generis* which is sometimes manifested by anesthesia and sleep as well as by hyperesthesia and disturbances of sensibility and mobility, but most frequently this abnormal condition is purely *latent* and constitutes a very special psychophysiological condition through which it becomes possible to act on all the individual functions and modify them in the desired direction by producing a pre-impression on the subject's mind, an impression which consists in persuading him that the modification sought for has actually been realised. And the most practical method of obtaining this marvellous result is by stating the fact in a categorical and peremptory tone.”

Thus in this particular instance, the special developer of the unknown cryptoid condition induced by the Braidic process, a state to which Durand (de Gros) gave the name of *hypotaxy*, is verbal suggestion, or as the same author named it *ideoplasty*, the effect of which he compared with the action of light on an already sensitised glass.

"The individual," he says, "whom you wish to submit to hypnotisation is like a photographic plate. The employment of the ordinary Braidic, process sensitises him. But in order that the objects you wish to photograph should imprint their image, it is not sufficient to make the plate sensitive and then retain it in the dark. The plate must be placed in the dark room of the apparatus and the shutter then raised in order that the light reflected by the objects may perform its duty. This second part of the photographic operation is represented by hypnotisation by the ideo-plastic phase when the mental impression or suggestive word plays the part of the luminous rays."¹

It is moreover probable that the condition of hypotaxy can be produced in several other ways, or even that it may occur spontaneously in a certain number of individuals, but we are ignorant of its existence for want of employing the special methods that would reveal it to us. Thus, according to Professor Bernheim :—

"We very often observe the following phenomenon in typhoid fever : gently raise an arm and leave it to itself, it will remain suspended in the air. Then raise the other arm and it will remain stationary like the first. That is *catalepsy*. It is more or less accentuated. Some sick persons, after a few moments and more or less hesitation, allow the raised limb to fall. Others try to make some movements with the fingers or the hand, leaving the limb motionless ; others maintain the cataleptic condition entirely for several minutes or indefinitely. There is a

¹ See *Revue de l'hypnotisme*, February 1896.

weak form of catalepsy when a slight impulse will cause the limb to fall again. More frequently, however, it is either rigid or elastic."

There are, according to Professor Bernheim, "interesting facts of frequent occurrence, which physicians pass over daily because they do not look for them," and he defines these in the same manner that we have defined cryptoid phenomena.

Everybody has heard something of the extraordinary, and still controverted, facts described by M. de Rochas under the name of *externalisation of sensibility*, reproduced and verified by Dr. Paul Joire of Lille. The sensibility of certain individuals when plunged into a deep hypnotic condition disappears from the surface of the body and seems to be projected outside at distances more or less remote from the skin, or can even be located in objects held in contact with these individuals for a given time.

An objection has been raised to these experiments—at least, we have heard the objection made by an eminent physician, an expert in all details of hypnotism—that if this externalisation of sensibility is produced spontaneously in deep hypnotic conditions, it is surprising that it has not been noticed before being observed by Colonel de Rochas, in the many experiments carried out with subjects who were undoubtedly plunged into these deep hypnotic conditions. But we may observe that the phenomenon is just one of those only observable under conditions where its special developer may be employed, which, in this case, consisted in a sudden and almost instantaneous excitation (pinching or pricking) in a certain spot at a distance from the organism. In pinching or pricking the skin, the experimenter certainly traverses the sensitive layer and yet apparently no effect is produced.

If we may venture here to refer to what we have personally witnessed, we have observed this fact during experiments in which it was proposed to study an altogether different phenomenon. The intention was to observe the various modifications produced in the cutaneous sensibility of a subject by covering a part of the body at a distance of eight or ten centimetres from the skin with the experimenter's hand. The subject, a young man of twenty, was not even asleep, and we remained content with bandaging his eyes in such a way that we were convinced he could see nothing of what was taking place around him, and all present, without exception, preserved silence in order to avoid all possibility of suggestion. But under these conditions we noticed that, from thirty to forty seconds after the placing of the hand, there appeared a condition of anesthesia clearly located in the parts covered by the hand, and in these parts only. At all events, the subject spontaneously mentioned all the contacts made on other parts of the body and remained silent every time the contact was made at a part covered with the experimenter's hand. We then conceived the idea of suddenly pinching the air at some distance from the part where the anesthesia seemed located without communicating our intention to anyone; and immediately all present saw the subject's hand, the seat of the anesthesia, make an abrupt movement, whilst the strongest pinching on the skin itself had not, hitherto, provoked any reaction; and singular to relate, the quasi-reflex movement of the hand was not accompanied by any conscious sensation on the part of the subject, who did not seem to have the slightest perception of it. The same phenomenon was verified on several occasions in other séances.

We may go still further. Assuming that the externalisation of sensibility is an authentic and real phenomenon (not the result of an illusion on the part of the spectators) there is no reason for supposing that it is a

rare, accidental, abnormal phenomenon, which requires a particular hypnotic condition for its production. (In fact, as just stated, we have witnessed it in a subject in a waking state.) Perhaps, on the other hand, it may be a normal phenomenon, general but cryptoid, that is to say, we do not yet know how to bring it into evidence by means of a special developer.

The following experiments which we have witnessed, making every reserve against the possibility of unregistered observations, seem to support this hypothesis.

On the first occasion the experimenter held a glass half-full of water in his hands for a short time (about five minutes), one hand holding the glass and the other placed over it. He then carried it towards the subject, who was at the other end of the room and in a somnambulistic condition, with his eyes carefully bandaged; he gave him the glass of water to hold in one hand and asked him to plunge one or two fingers of the other hand into it; this done, the experimenter returned to his former position and made a sign to one of the spectators, without uttering a word, to pinch or prick the hand which had been placed over the glass. Every time the experimenter was pricked or pinched the subject gave a start and immediately declared that he felt the pinching or pricking in his own hand.

On the second occasion the experimenter, after having held a glass of water for a short time in his hands as in the previous experiment, placed it on a table within reach of one of the spectators: he then returned to the other end of the room towards the subject, who had been previously placed in a somnambulistic condition, his eyes carefully bandaged, and took one of his hands in his own. From this moment, every time that the spectator made a pricking, pinching, or any contact whatever on the glass of water or in the air above it, the subject started and at once declared that he felt the corresponding sensation.

Everything happened in the two experiments just as though the experimenter had externalised his sensibility into a material object and remained in communication with this object by some kind of force so that every impression made on his nervous system was immediately experienced by the object, and reciprocally every impression made on the object was immediately experienced in his nervous system, and the subject acted simply as reactive or detector by reason of his exceedingly delicate impressionability. If this is the correct explanation to be given to these unusual experiments we are still confounded by the number of subtle, elusive actions which we must every moment exert on all objects surrounding us and probably also on our fellow men, or which we ourselves must receive, but which remain absolutely unknown to and unsuspected by us in the absence of the appropriate developers. How many lines, how many currents in all directions cross but yet are not entangled in the swarming depths of ether ! Who can say if the poet did not unjustly accuse Nature when he wrote :—

Nature au front serein, comme vous oubliez !
Et comme vous brisez dans vos métamorphoses
Les invisibles fils ou nos cœurs sont liés !

Who can say that contemporary savant (was it not Berthelot ?) was only jesting when he suggested that it may still be possible even in our day to recover and photograph the portrait of Alexander under some rock where he slept for a few moments during his expedition across Asia ?

VI

It would be interesting in order to complete the survey of this first category of phenomena, to study also the different kinds of reactives or developers.

It seems that in certain cases it is sufficient, in order to

detect a phenomenon, to interrupt or suspend another phenomenon which annuls the first by preventing the manifestation being made direct to our senses or at least, producing any sensible effect. We know, in point of fact—and we will try to demonstrate it ourselves further on—that natural causes may interfere with one another, and in that case, either they may be mutually neutralised, or one of them may become completely eclipsed by the other. What prevented the ancients from ascertaining the weight of the air was the pressure of all the atmospheric molecules being mutually counterweighted, so that it was not possible to manifest the results at one point without suppressing them at another as Torricelli and Pascal did. If we are placed in conditions (for example, at the bottom of a mine shaft) where the light from the stars strikes directly upon the eye without the light from the sun intervening, then only are the stars visible in broad daylight.

In other cases all that the developer does is to arrest an action and cause it to become perceptible by delaying it and causing it to react on itself, when it would otherwise pass too rapidly and become impossible to detect. That is why, without isolating bodies and bad conductors, we should never have become aware of the existence of electricity. One of our keenest contemporary philosophers, M. Bergson, seems by this means to have been able to give an explanation of external perception, as he understood it. It turned according to him, on explaining¹ “not how perception is born, but in what way it is limited, because rightly it should reflect all things, but in fact it is reduced to that which is of interest to us.” Indeed, “what is given is the totality of the pictures of the material world with the totality of their internal elements. But if you imagine real, that is to say, spontaneous centres of activity, the rays which reach there and affect this

¹ *Matière et Mémoire*, p. 29. Paris: F. Alcan.

activity, *instead of crossing them*, appear to return and define the contours of the object which sends them," and further, "if we consider any place whatever in the universe, we may assume that the action of matter passes there without resistance or loss, and that the photograph of the whole is translucent: there is wanting behind the plate a black screen in order that the picture may stand out. Our *zones of indetermination* (living, conscious beings are thus designated) would act in some way the part of a screen." For our part, we believe that this mode of *revelation* is much more frequent in nature than we think, and that in particular what distinguishes persons sensitive to actions called magnetic and telepathic, etc., from the majority of the human race is that their nervous system is comparatively impermeable to such actions which it stops and accumulates on their way, whilst they cross "without hindrance or loss" the nervous systems of the majority of men.

The developer also often operates in continuing, so to speak, and reproducing the phenomenon which it makes known to us. It acts as a kind of link between one and the other; and we can read more or less easily all the variations of the latter in the variations of the former. It forms an analogy with the magnet and iron filings, or with sonorous vibrations (for which besides nature has given us the auditory nerve as developer) and sand exposed on vibrating plates, etc., etc. Recording apparatus come into this category, and it will doubtless be convenient to arrange in a special group those which do not only reproduce the vibrations of a phenomenon, but which at the same time amplify and multiply them.

These few examples will, perhaps, suffice to give an idea of the diversity of methods by means of which phenomena, more or less opposed to our ordinary processes of perception, can manifest themselves to us. All ought, in fact, to lead to the result of placing the phenomena in

harmony with our nervous system, which, on the last analysis, remains the supreme developer; but if it is, in certain instances, the most delicate of all, it is also the most easy to deceive; and it is for this reason that all researches in which it is not possible to give the complement of artificial developers, such as physical apparatus or chemical reactives, are condemned almost invariably as unreliable. We are not much more forward in this respect than when Laplace wrote:—

“ Of all the instruments we can use in order to know the agents of nature, the most sensitive are the nerves, particularly when their sensitiveness is excited by special circumstances. By their means we discovered the feeble electricity which is developed by the contact of two heterogeneous metals, which has opened up a vast field to the researches of physicists and chemists. The singular phenomena which result from the extreme sensitiveness of nerves in some individuals have given birth to various opinions on the existence of a new agent, which has been called animal magnetism, on the action of ordinary magnetism, on the influence of the sun and moon on some nervous affections; finally, on the impressions which can prove the proximity of metals or running water. It may well be thought that the action of these causes is very feeble and can easily be disturbed by a large number of accidental causes. Thus, although in certain cases it is not manifested, we must not reject its existence.”

Certainly not, but are we right in categorically affirming its existence, as long as we have not succeeded in finding for it a developer less inconstant and less obscure?

VII

The second division of cryptoid phenomena may include all the phenomena which nature, in the ordinary course of its operations, only very rarely, if ever, produces

but which are, nevertheless, enveloped in its laws, given certain possibilities. They are consequently not cryptoid in the same sense as those already mentioned, because, when they are realised, whether spontaneously or because we have ourselves provoked them, they immediately come before our senses, and we can generally observe them without much difficulty; but they are, none the less, hidden and relatively inaccessible phenomena since they only appear very exceptionally, unless we, so to speak, go to them, by putting ourselves in the necessary conditions suitable for their realisation. Also in the majority of instances, they may be called paradoxical in the sense that the majority of people, not having observed them, are pre-disposed to call them improbable, and even impossible, until science shall have found the means of producing and reproducing them at will before our eyes. They require, in point of fact, no less than the phenomena already mentioned, developers in default of which they will remain not only invisible but non-existent. Hence, immediately these developers are given, either, as we say, by chance or because science which has at last discovered them can cause them to act at will, we see these phenomena spring up abruptly from the base of the latent possibilities of nature, like those genii in Oriental literature which suddenly appear, ready to obey as soon as the magical word which evokes them is pronounced.¹

In practice it is not always very easy to distinguish these phenomena from those of the preceding group. It may be, for example, some very far distant recollections (as in the example, which has become classical, of the sick young woman who recited Hebrew, Greek and Latin texts, which she had almost unconsciously heard several

¹ It is probably to this category that the phenomena of the appearance of new living species by means of transformation of already existing species belongs.

years previously). Had the illness here merely revealed an already existent state or a hidden inherent power ? In a general way, if we admit that every impression, every thought, even the lightest and most fugitive, leaves a trace in our organism and in our mind, each one of us contains a world of cryptoid phenomena which we may include in one or the other category.

Moreover, it may also happen that a phenomenon belongs at one and the same time to both categories, as is actually the case with many of the phenomena we have described. We have seen how the effects of passes or of Braidic processes sometimes remain unperceived, if we have not applied to them the developer of suggestion or muscular contraction voluntarily provoked in the subjects ; but from another point of view, who could believe, without having himself made the experiment, that it is sufficient to execute certain movements with the hands in front of the faces of certain persons, or to cause them to gaze upon an object for a certain time in order to realise in them phenomena in their nature so exceptional and extraordinary as somnambulism, lethargy, catalepsy, and the most varied forms of anesthesia, hyperesthesia, amnesia, hypermnesia, etc. This explains the persistent incredulity in which these phenomena have been held by savants as well as by ordinary people for so long, and we can understand the reflection of Professor Bernheim scarcely ten years ago :—

“ What always astonishes the colleagues who have done us the honour to come to our surgery, is the singular ease with which the majority of the subjects of all ages, sexes and temperaments can be hypnotised. They imagine that the hypnotic condition is the exclusive appanage of some rare neuropathic subjects and they now see all, or nearly all, the sick people in the room fall successively under the dominion of suggestion. How, say they, can it have happened throughout the centuries, that we have

been alongside of this truth, so easy of demonstration, without its having been discovered before ? ”

We have endeavoured in the foregoing pages to justify our deep conviction, that the more science pursues such researches, the more will these discoveries of hidden truths be multiplied. The truly scientific investigator has but yesterday arrived upon the scene. To the men of earlier generations he was an unknown species, and his work is the work of the coming age.

CHAPTER II

THE PARADOXES OF CAUSALITY

THE study of the conditions of human knowledge and of the progress of science have led us to admit the existence of a class of real phenomena which are inaccessible to our ordinary methods of investigation.

The study of the experimental method and of the special difficulties which attend the application of the axioms usual in all classes of rather complex phenomena, such as biological, psychological and social, will lead us by a different way to an identical conclusion.

I

That the principle of causality may be the base and pivot of the experimental method, all theorists of this method admit by common consent; and on this point Stuart Mill, Taine and Claude Bernard all use the same language. They wish to imply, not only with MM. Ravaissón and Lachelier, that the principle of causality legitimises and guarantees the operation to which this method holds as to its natural boundary, to wit, induction, but also that it creates and directs all the intermediary processes which lead up to this final operation, namely, observation, hypothesis and experiment.

We know that the experimental method—of which Claude Bernard has made an analysis which will probably never be surpassed—is essentially composed of these four

operations arranged in the following order; first, *observation*; then *hypothesis*; then *experiment*; finally, *induction*. The order here is of such importance that if, preserving the same elements, we arrange them in some other way, the result thus obtained is no longer the experimental method but something altogether different. We can observe, we can make hypotheses, we can experiment, and we can make inductions without using the experimental method, if these operations do not follow in the same order and are not connected or conditioned, the one by the other, according to the relationship of which this order is the precise expression.

Thus observation in the experimental method has for its object making the hypotheses possible, as the sole end of the hypothesis is to make the experiment possible, and the experiment is only an end to just induction.

To observe in order to suppose, to suppose in order to experiment, to experiment in order to make inductions, is the succession and subordination necessary for the processes of the experimental method.

Let us remark however, that if these were to be arranged in accordance with their natural affinities, the temptation would be rather to place observation and experimentation together in a primary group, both being processes of information and evidence relative to particular facts; and hypothesis and induction in a second group, both being processes of interpretation and reasoning, relative to general laws. It is thus that they were ranged by Bacon and Stuart Mill, who never succeeded in distinguishing the *empirical method* (if we may call it by this name) from the true experimental method.

The originality of the experimental method comes from this: that it intersects the processes of verification and interpretation in such a way that they bring each other into action and complete each other, acting reciprocally as check and counter-check.

We may summarise the whole in the following formula:—

First moment : preparatory verification (observation).

Second moment : provisional interpretation (hypothesis).

Third moment : decisive verification (experimentation).

Fourth and last moment : definite interpretation (induction).

At all these moments, the investigator invokes the principle of causality, but especially at the second and third.

In fact, the hypothesis, which a first observation suggests to him and which allows of the experiment being made, is necessarily relative to the cause or causes of the phenomena observed; for he admits *a priori* that the phenomena cannot be without cause and that the cause which produced them *hic* and *nunc* is capable of reproducing them everywhere and always.

Similarly the experiments instituted in order to verify this hypothesis are, in a way, deduced from the formulæ which define the characteristics whereby the true cause of a phenomenon may be recognized, formulae which we propose to name *axioms of causality*.

But the cause of a phenomenon is triple in character: In the first place, by its presence, it creates the phenomenon; in the second place, by its absence it suppresses it; in the third place, by its variations, it changes it.

From these we have the three axioms of causality.

FIRST AXIOM :—Admit the cause, the effect is produced.
Positâ causâ ponitur effectus.

SECOND AXIOM :—Take away the cause, the effect ceases to be produced. *Sublatâ causâ tollitur effectus.*

THIRD AXIOM :—Vary the cause, the effect will vary.
Variatâ causâ, variatur effectus.

From these also we have the three tables of Bacon; the table of presence, the table of absence and the table of degrees; and the three methods of Stuart Mill; the method of concordance, the method of difference (which

includes the method of residues) and the method of concomitant variations.

Now, each of the axioms of causality gives birth to two corollaries; the one positive the other negative; the first enabling us to say that such circumstance is certainly cause; the second that such circumstance is certainly not cause.

For example, every circumstance, in so far as it suffices for the production of the phenomenon is certainly cause: *positive corollary of the first axiom.*

Every circumstance which may be present without the phenomenon occurring is certainly not the cause: *negative corollary of the second axiom.*

And again—every circumstance of which the elimination prevents the production of the phenomenon is certainly cause: *positive corollary of the second axiom.*

Every circumstance which may be absent without the phenomenon being also absent is certainly not the cause: *negative corollary of the second axiom.*

We leave the reader to form for himself the two corollaries, positive and negative, of the third axiom of causality.

A particular experiment is nothing else than the application deductively of one or other of these corollaries to some circumstance that is supposed to be or not to be the cause sought for, in such a manner that it necessarily assumes one or other of the following forms.

1. If the question is to prove that such circumstance is the cause we show by experiments that—

This circumstance is such that *it is sufficient to admit it for the phenomenon to be produced*; or that *it is sufficient to suppress it for the phenomenon not to be produced*; or, finally, that *it is sufficient to vary it for the phenomenon to be varied*; and we conclude: It is therefore certainly the cause of the phenomenon.

2. If, on the contrary, we wish to prove that this

circumstance is not the cause, we show by experiments that—

This circumstance *may be present without the phenomenon being present*, or, *it may be absent without the phenomenon being absent*, or, finally, *it may vary without the phenomenon varying*; and we conclude : It is therefore certainly not the cause of the phenomenon.

These two orders of proofs are, moreover, most frequently inseparable; because, before proving that any circumstance is the cause sought for, it is necessary, in many cases, to begin by proving that no one of the circumstances, *b*, *c*, *d*, which accompany it, can be the cause sought. Better still, the proof positive seems to be able, in certain cases, to be directly inferred from negative proofs (and in that consists the method of residues). Suppose that the only circumstances which immediately precede the phenomenon are *b*, *c*, *d*, *f*, if it is proved that *b*, *c*, *d*, cannot be the cause of the phenomenon, we are right in concluding without other proof that the cause is *f*, without which it is necessary to suppose that the phenomenon had no cause : which is impossible.

There, in a few words, is the schema of the experimental method.

II

However, this schema does not seem to be absolutely accurate.

Neither the axioms of causality, nor the corollaries derived from them, nor the particular methods authorised by both seem to us to be free from all objection.

Without doubt, as long as only simple, elementary, and, in a way, abstract and general phenomena are in question, like those which form the object of mechanics and physics, these formulae agree with the reality; and without fear

of falling into gross errors we can follow the practical rules which may be deduced.

But it is not the same when we deal with more complex phenomena belonging to higher orders, with more concrete and special phenomena, as Auguste Comte called them, especially biological, psychological and social phenomena.

Then the axioms of causality cease to be true.

It is no longer always true that : Admit the cause, the effect is produced.

Or that : Take away the cause, the effect ceases to be produced.

Or finally that : Vary the cause and the effect varies.

We are right in opposing the traditional formulae with the new formulae which contradict them :

Positâ causâ, non semper ponitur effectus ;

Sublatâ causâ, non semper tollitur effectus ;

Variatâ causâ, non semper variatur effectus.

It also follows that the corollaries of these axioms cease to be true, at least the negative corollaries :—

“ Every circumstance which can take place without the phenomenon taking place is not the cause of the phenomenon.”¹ That is false : it may very well be the cause.

In the same way : “ Every circumstance which may be absent without the phenomenon being absent is not the cause of the phenomenon.” That again is false : it may very well be the cause.

The same remark, finally, applies to the negative corollary of the third axiom.

But then the three tables of Bacon and the three methods of Stuart Mill become uncertain and weak ; and, in particular, it is no longer possible to conclude that any

¹ See Rabier's *Leçons de philosophie Psychologique*, p. 367. For example, making use of the method of difference, we say : “ All that precedes without the phenomenon occurring is not the cause of the phenomenon ; that is why we can exclude such and such antecedents.” The principle invoked by the author is the negative corollary of the first axiom of causality.

circumstance is the cause of a phenomenon, by only proving that the other concomitant circumstances, *b*, *c*, *d*, could not be the causes.¹

From which it follows that many errors and sophisms in biology, psychology and social sciences spring doubtless from our applying to these sciences, without modification or restriction, the formulae and methods which have only their whole truth and value in the most simple and abstract sciences.

To what, then, is due this insufficiency of axioms and schematic rules of the experimental method in this new order of studies ?

It is due, in our opinion, to three great facts and three important circumstances which the majority of theorists² and even some practitioners of this method do not appear to have emphasised sufficiently and of which the importance increases all the more when the phenomena which are under consideration become more complex and appertain to the higher orders.

These three circumstances are, if we may be permitted to give them names which at once mark the analogies and differences : first, the *interdependence of causes* ; then, the *interference of causes*, and finally, the *intersubstitution of causes*.

Let us examine them in turn.

III

Every time than an effect is relatively simple, as in sciences of the first order, which we may term elementary, such as mechanics and physics, the cause which produces it generally presents the same characteristic and we may regard it as consisting of one phenomenon only, the

¹ *Ibid.*, p. 367 : " All experimental methods succeed in determining causes by the *exclusion* of antecedents which are not causes."

² We except Stuart Mill.

presence of which is sufficient to produce the effect : and it may be said that this effect only needs one cause for its production. But the same rule does not apply to sciences of a higher order, such as biology and psychology, which have, in fact, *resultants* only as objects. Here, though the effect may be simple in appearance, it is really very complex, and the cause which produces it consists not in one phenomenon only, but in a more or less considerable number of phenomena, all of which are necessary, but none of which, taken alone, is sufficient to produce it. In other words this effect has several causes, the concurrence of which is indispensable to its existence, and which are even dependent one upon another; or in a word interdependent.

Now, amongst these causes, there is almost always one which particularly strikes the attention of the observer, because it is that one which determines the appearance of the effect; the others simply contributing to it. We may, therefore, easily distinguish between this principal and dominant cause and the causes which are simply predisposing and accessory : also, the name of *cause* is given to that one in particular, since the others can only be termed *conditions*, or even, to use a vaguer word, *circumstances*. Who would hesitate, for example, to say that the causes of fermentations, putrefactions, infectious maladies, etc., are microbe germs, whose intervention in phenomena of this character Pasteur has thoroughly established ? And yet these germs are only causes with the assistance of a large number of other causes, such as temperature, humidity, and the chemical composition of the surroundings where they are active, etc.

On the other hand, the interdependence or solidarity of multiple causes, the combination of which is necessary and sufficient for the production of a certain effect, may be more or less close.

Two instances may be cited in this respect.

Sometimes all the causes are *equally* necessary for the production of the effect, so that if one of them, however trivial or insignificant it may appear, is omitted, the effect is completely missed : all the other causes present not appearing to be causes in any degree.

Sometimes all the causes are necessary, but *not all equally so*, and the effect is still produced, but in a more or less imperfect manner, when the principle cause acts without the co-operation of a greater or lesser number of accessory causes.

The consequence of the interdependence of causes is that the first axiom of causality : *Positâ causâ ponitur effectus*, and the negative corollary derived from it : "Every circumstance which may be present without the phenomenon being produced is not the cause of the phenomenon," must both be used with caution.

Granted, in fact, a cause perfectly capable of producing a phenomenon or even tending to produce it under certain conditions of environment (that is to say, with the co-operation of other predisposing or accessory causes) it may very often happen (particularly if these conditions are very numerous, very singular or not often naturally realised) that this cause may be present and active and, yet, the phenomenon is not produced in the slightest degree. By this we might be led to conclude that this so-called cause of the phenomenon has no claim to the title, that it can never be the cause : and, nevertheless, this conclusion would be false.

Nothing is more frequent than this sophism in biology, psychology and social science.

IV

The interferences of causes leads to the same result.

It consists in this that a cause, complete and sufficient by itself, is yet always susceptible of becoming paralysed,

annulled or interfered with by one or several antagonistic causes.

It follows that the majority of causes in all orders of somewhat complex phenomena, need not only to be assisted by co-operating causes, but also not to be opposed by intercurrent causes.

But this negative condition is much less easy to determine than the positive condition. It is possible to determine, once for all, what are the circumstances the co-operation of which is necessary and sufficient for a certain cause to produce an effect, because these circumstances are limited in number and definite in kind; but it is necessary to have tried all the possible combinations of causes, known and unknown, existing in nature, in order to say with certainty if such cause, which, hitherto, had not failed to produce its effect in all the combinations into which it had entered, would not suddenly fail to produce it one day when a certain combination, hitherto unknown, should take place.

That is why the first axiom of causality is once again proved to be erroneous. Grant the cause, as much as you will; if you, at the same time, admit an interfering cause, the effect will never be produced. On the other hand, suppress the interfering cause, the effect will be produced, and perhaps it will be to the suppression that you will be led to attribute the effect, as the physicists of antiquity and the Middle Ages attributed the rising of liquids in pumps, not to the pressure of the external air but to the vacuum, that is to say, to the suppression of internal air.

Stuart Mill has described in his *System of Logic* the interference of causes, and he has even clearly demonstrated that this is an absolutely general fact.

“All the laws of causation,” he says, “are susceptible of being contradicted, and apparently annulled by entering into conflict with other laws, the separate result of which

is opposed to them or more or less incompatible with them. There are some cases in which one law is really operating which yet seem at first sight to be cases in which it does not operate in any way. For example, a mechanical force is neither more nor less than a cause of motion, and yet the sum of the effects of two causes of motion may be immobility. This fact is accurately designated by the expression *tendency*. All the laws of causation being susceptible to contradiction require to be formulated in terms which only affirm tendencies and not definite results."

This passage is all the more remarkable as it appears to contradict the idea that Stuart Mill has given as to causality, when he defined the cause as the invariable and unconditional antecedent; because, in virtue of the interference of causes it may well happen that a cause only very rarely precedes its effect, if it is by nature opposed or interfered with by a large number of other causes; and yet it is nevertheless cause. The cause is, therefore, not that which invariably or even unconditionally precedes a phenomenon, but that which invariably and unconditionally tends to be followed by it, when even this same tendency would ninety times out of the hundred be opposed in all our experiments.

V

The interdependence and interference of causes affects the first axiom of causality, and doubtless also, the third (we do not insist on this point, which seems quite clear to us). The second is, in turn, called into question by the intersubstitution of causes.

We thus describe what Stuart Mill called the *Plurality of Causes* in a passage which we may be permitted to quote :—

"It is not true that the same phenomenon is always produced by the same cause : the effect may sometimes arise from A, sometimes from B. There are often several independent modes by which the same phenomenon could have been originated. Many causes may produce mechanical movement, many causes may produce some kinds of sensation ; many causes may produce death. A given effect may really be produced by a certain cause, and yet be perfectly capable of being produced without it."

If, therefore, we suppose an effect of this kind, it will be correct to say that there exist for this sole effect several distinct, independent causes, susceptible of being replaced or supplanted by one another. But the savant who, by hypothesis, only knows one of the causes and would not suspect or admit the possibility of intersubstitution, would evidently be quite disconcerted should he ascertain that the effect is produced in the absence of his cause : and then either he would not believe his senses but would deny that the effect was really produced ; or he would suppose that the cause to which he had hitherto attributed it was present, although he did not perceive it by any means ; or, eventually, he would believe himself to be deceived in attributing it to this cause and he would henceforth regard it as an inexplicable and incomprehensible phenomenon, the cause of which had escaped all scientific investigations.

Another class of errors or sophisms produced by ignoring or neglecting the interdependence of causes consists in this improper use of the method of residues which we have already indicated. For example, the author of a work on the Cause of Belief claims to demonstrate the Cartesian theory of voluntary belief by showing that belief cannot have intelligence for its cause, since, on the one hand, there are some beliefs that are by no means founded on rationality, and, further, that it could not have sensibility for its cause, since, on the other hand, there are some

beliefs to which sentiments are entirely foreign, from which he concludes that the cause must be the third remaining faculty, that is to say, the will.

By an analogous argument a Jesuit priest has claimed to demonstrate that all the phenomena of hypnotism have undoubtedly a supernatural and diabolical cause; because, he says, these phenomena cannot be explained either by a physical influence of the hypnotiser, because one can hypnotise oneself by looking at a brilliant point, or by the peculiar temperament and imagination of the subject, since he can be unconsciously hypnotised by others, and as there are no other natural causes of hypnotism there remains no other resort than to a supernatural cause, which not being divine or angelic, can only be diabolic, by reason of the morbid and malevolent nature of the effect.

But unless we greatly deceive ourselves, faith, hypnosis, and many other phenomena also, are what a contemporary savant Durand (de Gros) calls *polyetic* phenomena, that is to say, capable of production by intersubstitutionary causes, and hence, we see the insufficiency of the theories which persist in endeavouring to explain them by a sole cause, such, for example, as explaining belief by intelligence alone, or by sensibility alone, or by will alone; explaining hypnosis solely by the action of the magnetiser (as Mesmer did) or by suggestion alone (as the Nancy School do), or by hysteria alone (as the Paris School do), etc.

But we will go still further by remarking that there exist in nature many general causes, the function of which is, in some way, to do duty more or less perfectly for all the others. Such, for example, in the inorganic domain is *inertia* by virtue of which a body, once set in motion by any cause, continues the motion by itself even when this cause is absent: such are specially in the biological, psychological and social domain, *habit*, *memory* and *imitation*, which more and more tend to take the place of

all other causes, being regarded by some as the sole sufficient causes for all biological, psychological and social phenomena.

This results in great difficulty in the application of the method of difference.

Many experiments governed by this method consist in postulating, first of all, a certain agent, then suppressing it, all the other circumstances remaining the same. If a certain phenomenon is found present and suppressed alternately with this agent, we are right in concluding that this agent is the cause. But we have no right to conclude, as has nearly always been done, that the agent is not the cause because even after its disappearance, or in its absence, the phenomenon continues. May it not be continued by virtue of inertia, habit, or some other auxiliary cause? *Sublatâ causâ non semper tollitur effectus.*

VI

The fact of plurality or intersubstitution of causes has, however, been disputed.

Thus M. Rabier, in his *Leçons de Philosophie* (Psychology p. 355), admits that the principle of laws, assumed, according to him, by all the methods of experimental research is presented under two aspects.

Firstly the same causes produce the same effects; secondly, the same effects are produced by the same causes, or, according to Newton's formula, *effectuum naturalium ejusdem generis eadem sunt causae.*

But this second aspect of the principle of laws expressly contradicts the intersubstitution of causes.

M. Rabier recognises, it is true, that this second proposition is not as evident as the first, that it may seem at first sight that experiment contradicts it, and even that

one of the greatest difficulties of the experimental method in the search for causes¹ results from the multiplicity of possible causes of one and the same effect.

Nevertheless, he thinks he can, on the one hand, demonstrate it rationally, and, on the other hand, show that experiment only apparently contradicts it.

The demonstration consists in deducing the second form of the principle from the laws of the first by causing the principle of reason to intervene. This is what M. Rabier has himself said :—

“ The same causes produce the same effects : for what reason ? Because it is the *nature* of the cause that determines the *nature* of the effect. Any cause can only give that which it has, it follows that from a certain determined cause a certain effect will invariably result. But if it is the nature of the cause which determines the nature of the effect, it follows identically that the nature of the effect is determined by the nature of the cause. And, therefore, as one same nature in the cause induces one same nature in the effect (first branch of the principle of laws) one same nature in the effect supposes one same nature in the cause (second branch of the principle of laws). It is, therefore, likewise true that the same causes produce the same effects and that the same effects are produced by the same causes.”

The whole of this argument which invokes the well-known definition of Montesquieu “ Laws are necessary relations derived from the nature of things,” definitely rests on the eminently abstract and metaphysical concept of *Nature*. But M. Rabier has himself already recognised the inanity of this concept, when in reproducing Hume’s criticism on the idea of cause, a criticism which he

¹ The author adds here “ as we shall see,” but if we refer to his *Logique*, published later, we search in vain for any allusion to this multiplicity of possible causes of one and the same effect and to the difficulty of method which results from it.

declares "decisive and definitely accepted by science," he writes :—

" Every effect ought naturally to differ from its cause, without which, there being nothing new in the effect, there would be no effect. There is an effect to the extent to which, the cause being given, something is produced which is distinct from this same cause. Thus what is called effect, is difference. The identity of cause and effect is therefore impossible. From which it follows that the idea of cause does not include the idea of effect, and that we cannot deduce it analytically."

But what then does he mean by saying that a cause can only give that which it has ? Can this phrase mean anything if " all effect being an event distinct from its cause cannot be perceived in the cause itself as is proved by the impossibility of foreseeing the effect *a priori* and the possibility of denying the effect without contradiction."

The proposed demonstration is, therefore, only begging the question. The nature of the cause being in itself unknown to him, M. Rabier supposes *a priori* that it is whatever is necessary for the effect to be produced, that is to say, he introduces beforehand the idea of the effect in the idea of the cause and there is no trouble involved after in making the one proceed from the other.

But even while agreeing with him in the case of metaphysical abstractions, what prevents us conceiving of an effect, the nature of which is such that it can be deduced indifferently from two or more different causes ? In arithmetic the same number may be obtained in several different ways : for instance, $5 + 5$, $6 + 4$, $7 + 3 = 10$, or again $15 - 5$, $2 \times 5 = 10$. In mechanics an infinitude of different components may give identical results, etc.

It is, therefore, by no means necessary, *a priori* that the

same effects should be produced by the same causes. The identity of these causes may be purely *formal* and not *material*, being an identity of relation and not an identity of *nature*, in the sense that these causes, however different they may be, agree, nevertheless, in this common characteristic, of leading to and resulting in an identical effect. In a word, their identity may only be an equivalent.

M. Rabier's language is less clearly affirmative when he speaks from the point of view of experiment :—

“ Perhaps,” he says, “ the experiment only apparently contradicts this principle, and only because we take things in bulk, and do not know how to discern with precision, in each case of causality, what constitutes cause and what effect.”

And he takes one of the examples he has himself quoted : the same carriage may be set in motion by a horse, mule or ass :—

“ In order to have the total effect it is necessary to take account of all the concomitant effects of the principal effect (the movement of the carriage), to wit the shaking of the ground, the traction exerted on the shafts or the harness. In taking all these circumstances into account we see that the effect is not exactly the same, when a horse is put to the carriage as when a donkey is used. On the other hand it is also necessary to analyse the cause, and it will be recognised that in the total object which we call cause, all that we are especially considering does not intervene as the cause of the effect. Thus the ears of the ass, where they differ from those of the horse, have nothing to do with the motion of the carriage. By proceeding in this way making a precise analysis on the one hand of the effects and of the causes on the other, we may succeed *perhaps* in recognising that what is identical in the effects (for example the same motion produced on the same mass) is produced in various cases by one and the same cause ” (here, one and the same quantity of motor force).

To which we reply, first of all, that the example selected by M. Rabier is not really an instance of plurality or of intersubstitution of causes. When a horse, ass or mule may set a carriage in motion, it is evident, even without analysis that in all three cases the effect is produced by the same cause : unless we mean to see a case of plurality of causes in the fact that the carriage may be moved by two different horses or by the same horse at different times during the day. It is not in such simple mechanical phenomena that we look for examples of real intersubstitution, but in the more complex phenomena of psychological, physiological, or social life.¹

A more pointed example may be that of *sleep*, of which we can say to-day what was said more than a century ago by the unknown author of a remarkable work on Somnambulism.²

" There has not been up to the present any physician physicist or philosopher, who could explain the cause of sleep or how it is produced. All that can be said on this subject is merely conjecture, the work of the imagination : only one thing is certain, that sleep will supervene each time the body is found in a condition suitable for producing it, and that we succeed in placing the body in that condition by the assistance of art. Such is the well-known effect of narcotic plants like opium, rye-grass, etc. But it is not necessary to take drinks or drugs in order that the waking may be transformed into the sleeping condition. There are a number of other means which produce the same effect, and this is even one of the singularities of sleep that it is produced by an infinite variety of causes,

¹ And yet even in mechanics, there may be real intersubstitution of causes, if the motion of a body may be caused either by the impulsion of a moving power applied to this body, or by the attraction of a force acting at a distance ; in the case of a carriage, if it is set in motion either by an animal or a man put to the harness, or by a magnet sufficiently powerful to attract its iron work.

² *Essai sur les probabilités du somnambulisme magnétique*, published anonymously. Amsterdam and Paris, 1785.

which are altogether opposed one to the other; for instance, if excessive heat gives rise to sleep, it is also produced by extreme cold. We have seen soldiers fall asleep in the snow and perish from the cold in the condition of drowsiness. If light, gentle friction produces sleep, severe pains also produce it, as proved by the example of several unfortunate people, who, on being tortured fell asleep in the midst of their agony. . . .”

“ Hunger and excess of nourishment, fatigue and rest, cool and warm drinks alike produce sleep: it comes from decrease as well as increase of blood; it comes from baths and bleeding; fever, which causes insomnia also causes drowsiness; a slight difference in quantity of wine awakens, or sends to sleep; we could go on indefinitely enumerating all the various causes which lead men to this condition, whether these causes *engender as many different combinations equally capable of producing sleep, or whether, in spite of their apparent difference they lead to the same result.*”

As we see in the concluding words of this extract, the author considers both hypotheses *a priori* equally admissible; on the one hand that the causes of sleep are distinct only in appearance and that a sufficiently deep analysis would bring them to unity; on the other hand that they are really multiple, although we can doubtless diminish the number, and that in the last analysis they will be found to belong to several irreducible types.

This alternative always presents itself to the savant in all cases of real intersubstitution of causes. But if, from the theoretical or speculative point of view, he prefers the first hypothesis, he must, from the experimental point of view, always take account of the second. That is why, even although the principle admitted by M. Rabier should be theoretically true, that is to say, even although a superior intelligence provided with analytical methods which we lack, should always succeed in seeing only one cause, where we see several, this principle would nevertheless remain valueless and useless in practice so far as

this method is concerned; and the savant ought to continue to reason and experiment as if the same effect could be produced by different causes.

However, even from the theoretical point of view, it seems probable that the reduction of the different causes to unity can never be completed and that this hypothesis defers rather than solves the difficulty.

Let us suppose for a moment that all the different causes of sleep can only produce it, in a certain condition of the nervous centres, which alone should be the immediate and determining cause of sleep; we should believe that we had thus brought all the causes to unity, but who would not see that the multiplicity would reappear immediately we tried to trace in the state which caused the sleep the different causes of which it is itself the effect?

A muscle is contracted, here under the influence of will, there by the action of the electric current; prove as often as you will that the electric current and the will only produce the contraction when working in identical conditions brought into play by identical intermediaries; at the end it must nevertheless be admitted there were two different causes, although one could be substituted for the other in the production of the same series of effects.

The consideration of these three circumstances—interdependence, interference and intersubstitution of causes ought to make us extremely cautious in our affirmations and particularly in our negations concerning causality.

It enables us, to establish this paradoxical thesis, at which we have already arrived by another method,¹ the truth of which the progress of science has begun to demonstrate and will, we believe, demonstrate yet more, to wit, that there can exist, that very probably there do exist in nature unknown causes, universally present and

¹ See previous chapter on *Cryptoid Phenomena*, especially pp. 24, 26, 44.

continually acting, but in such conditions that they almost entirely elude our methods of investigation and control.

Let us suppose that an unknown cause may be capable of producing two kinds of effects : some, very feeble or very coarse, only require the assistance of a very small number of accessory causes ; but effects of this class being susceptible of production by many substitutionary causes already known, it would appear infinitely more rational to attribute them to those ; others more marked and delicate would not be as easily counterfeited and could reveal the cause from which they emanate, but, unfortunately, they demand the assistance of a very large number of accessory causes, some of which are not often met with in nature ; also they are very rarely produced among themselves, and it would be impossible to reproduce them at will, even should we arrive at a complete knowledge of their mechanism. On the other hand the supposed cause finds in many other natural agents antagonistic causes capable of neutralising its action ; and, unless there are exceptional circumstances or experimental conditions specially instituted for this purpose, it only very rarely succeeds in preserving itself from their interference : that is why everything takes place in the large majority of cases as though it had no existence. Ought we to be astonished if a cause of this character, despite its universal presence and continuous action, was indefinitely ignored or unknown ?

But nothing can prove that such a thing does not exist in nature, because to imagine it we have but to inscribe to its account, in raising them to the highest degree of power, three circumstances of which our experience offers us numerous examples : interdependence, interference and intersubstitution of causes.

Electricity, as long as man did not know the means of producing and accumulating it artificially, responded very

well to the description we have laid down. Since the time of Thales it has been observed that amber and a very small number of other substances, acquired by friction the property of attracting small pieces of straw, but who saw in that the indication of a cause universally present and always acting in nature ? The majority of the effects produced by electricity—shocks, displacements, sounds, lights, etc. may be produced equally by other causes and that is why Descartes, for example, felt no necessity, in order to explain storms (lightning, thunderbolts, thunder), to add a new cause to the list of already known causes. Science has ended, however, by recognising that in it there is a force as universally distributed and as important in its effects as gravity and light. But imagine for one moment that bodies that are bad conductors of electricity were extremely rare on our planet, especially that dry air should be as good a conductor as moist air; in that hypothesis, electricity produced perpetually by all kinds of causes would be as immediately dispersed and lost without producing any sensible results in the whole of the terrestrial mass. How then could we suspect its existence and what reception would await the savant who succeeded in discovering it, from his colleagues ?

Thus once more Arago's saying is justified which all who work for the progress of the experimental sciences cannot reflect on too deeply : " He who outside of pure mathematics utters the word *impossible* lacks prudence."

CHAPTER III

THE SPIRIT OF THE NEW PSYCHOLOGY

IN the vast domain of contemporary philosophy, if we consider those newly explored regions where the greatest concourse of workers are at present assembled, the affairs of which excite in every one the most lively interest, news from which we await with the most ardent curiosity, we shall find two, which in the second half of the nineteenth and the commencement of the twentieth centuries, occupy not only professional philosophers but all who are, in any way, associated with the intellectual life of their country and times. They are, on the one hand, experimental psychology, or to speak more accurately, physiological psychology or psycho-physiology, the science of the relations between mind and organism, or, as it was formerly called, the science of the relations of physics and morals: on the other hand, sociology, the science of human societies regarded as living and evolving under the dominion of natural laws.

Perhaps at the present moment the interest and attention of the public are especially directed towards sociology, witness the recent international congresses where the most renowned sociologists of Europe and America met to exchange views on the object and method of their science; the creation, in recent times, of the chairs of sociology at the Sorbonne and at the College of France, and the many publications in France, England, Germany,

and the United States, where the most important socio-logical problems are daily discussed.

However, if we are right in following the famous precept of Descartes, that is to say, to conduct our thoughts in an orderly way by going from the most simple to the most complex objects, the study of Psychology, that is to say, of the individual, the human unit, ought necessarily to precede that of Sociology, that is of men grouped in society or that of human collectivity.

What, then, is this new psychology, experimental or physiological, and in what does it differ from the ancient ? Let us try to define its programme ; in other words, to seek first of all what is the object it has in view ; in the second place, what are the methods it employs ; finally, what are its tendencies and what is the spirit that animates it ?

It is a fact of common observation that each one of us appears to himself under a double aspect. On the one hand I look at myself from without and behold a material mass, extended, mobile and heavy, an object similar to those surrounding me, composed of the same elements, subject to the same physical and chemical laws ; and on the other hand, if I look at myself, so to speak, internally, I see in myself a being who feels, thinks and wills, a subject that knows himself in knowing all the rest, a kind of invisible, immaterial centre, around which the endless perspective of the universe is unfolded in time and space, spectator and judge of all things of which there exist for him only those which are in relationship with himself. This duality of the human being, common-sense expresses by distinguishing between mind and organs, by the anti-thesis of soul and body. It is found in the duality of the sciences which treat of man—physiology, the science of the body, and psychology, the science of the spirit.

To maintain the barrier which separates these two

sciences, to establish and defend the independence of psychology with regard to physiology, was the dominant preoccupation of the psychologist at the commencement of the century. The clever Jouffroy, in his celebrated *Mémoire sur la distinction des faits psychologiques et des faits physiologiques* has insisted upon and multiplied arguments for the separation of these two sciences, and for regarding as distinct and separate the study of the physical and moral aspects, which experiment, however, shows to be indissolubly connected within us ! Perhaps there was a necessary reaction against the inverse exaggeration of certain physiologists, such as Cabanis and Broussais, who claimed in some way to absorb the moral in the physical and reduce the complete man solely to the functioning of his organs. The right of psychology to exist is no longer contested to-day. The question is only if it can, if it ought to be, separated from physiology, or whether it is not, on the contrary, by associating closely with it, by leaning on its data and inspiring itself by its methods, more certain to succeed in solving the problems which are peculiar to it.

Thus psychology and physiology, which, till then, regarded each other as strangers or enemies, drew near and were from that time reconciled, and from their union grew the new science of physiological psychology or psycho-physiology, by which the facts of man's moral and intellectual life are studied, no longer separately and apart, in an abstract manner, but as they are in reality, in their intimate connection with the corporeal states which they influence and to the influence of which they submit.

In thus transforming itself, philosophy evidently complies with the irresistible tendency which at this time brings all sciences forward to a common evolution, which more and more endeavours to make them agree, harmonise and unite. The investigators formerly disunited, per-

sonally unknown to one another, now appeal to each other, meet and associate together. Psychologists are becoming physiologists and physiologists psychologists. Philosophers, scientists and practitioners all fraternise as workmen engaged on the same collective work—the unification of human knowledge.

I should add that in thus uniting itself with physiology, psychology, in fact, only renews the interrupted traditions of the two great masters of the old and new philosophy; the tradition of Aristotle, who defined the soul as having the essential form of the body, and who, in his works, *On Sensation*, *On Memory*, and *On Sleep*, gave the first results of experimental psychology; and the tradition of Descartes, who in his *Treatise on the Passions* constantly joined the analysis of various sentiments of the human heart—joy, sadness, love, desire, etc., to the description of corporeal movements which accompany these sentiments.

Such being the object of the new psychology, what are its characteristics and its method?

Its general characteristic is that expressed in the name of psychological physiology which I have several times given to it. Whilst the psychology of Jouffroy, Garnier and Damiron was essentially subjective, enclosed in the interior of the soul which it studied particularly, if not exclusively, by the reflection of the conscience, this is an objective psychology which takes as its base the scientific knowledge of the human body, of the organs which compose it, of the functions which are there displayed, of the tissues of which it is formed, and of their elementary properties; finally, of the disorders and maladies which disturb and corrupt it, the anatomy, physiology, histology, pathology, whether of the whole organism or of that part only whereby the physical and mental are in some way put into immediate communication—I refer to the nervous system and the brain. That is why this new

psychology imperatively demands the assiduous and amicable collaboration of the physiologist and the psychologist, the philosopher and the physicist. That is why also every important discovery in either of the two sciences is immediately echoed in the other, as we see in the recent theory of *neurons* due to the work of the Italian Golgi, the Spaniard Ramon y Corjal and the Frenchman Mathias Duval, and which, if definitely established by later researches, will certainly change all the ideas hitherto formed on the part played by the brain and the nervous system in the operations of the mind.

One special branch of the new psychology goes even further in the same direction; it endeavours to connect the study of psychical facts with remoter sciences, higher than physiology in the scientific hierarchy, because they present a higher degree of abstraction and generality, for instance with physics and mathematics themselves. This particular branch is the psycho-physical, which principally studies sensations in their relationship with physical agents—sound, light, heat, etc., which provokes them and which endeavours to apply to them the method of calculus. In 1860 Fechner published his *Elements de Psycho-physique* and since then psycho-physical science has continued to develop itself to the point where it seemed for a moment to constitute in itself all science, of which, however, it is only a part and doubtless neither the most essential nor the most interesting.

The second characteristic of the new psychology is the method: it is expressed by the other name of *experimental* psychology. The psychology which preceded it and which still continues, for there is no question of destroying and replacing but of enlarging and completing that which has been already acquired, classical psychology, is supported almost entirely by observation. To become attentive by the consciousness returning on itself,

as it were, in all occurrences of the interior life, even the most minute and fleeting, trying to penetrate into the souls of other men and ascertaining what has taken place by interrogating them, noting their words, actions, or even the alterations in their countenances and attitudes: such are the two processes of observation—internal and external, but both based on the consciousness to which this psychology has recourse.

The new is no longer content to observe: it experiments, and when it observes it submits the observations of the consciousness—necessarily subjective—to the objective control of the senses made more precise and sure by the employment of registering and measuring apparatus. Thus it has singularly extended the circle of its investigations. It no longer studies the phenomena of normal life alone, it seeks carefully to examine and analyse all the abnormal, exceptional, pathological cases in which the mechanism of psychic activity, mutilated or deranged, allows the observer better to observe its machinery; the born-blind, the deaf-mute, the criminal-born, according to Lombroso's expression, the hysterical, the neuropath, and the very varied forms of mental derangement. So that this psychology is not elaborated like the other in the brain of the philosopher quietly seated in his room and with his books only as his apparatus. It is done in hospitals, asylums and prisons; it is done in laboratories, specially created as theatres for such researches, with special instruments which are constantly increasing in number. In 1879, the great German psychologist Wundt established at Leipzig the first laboratory for physiological psychology, and since then, not only in Germany, but in all European and American countries, this one has served as model for numerous laboratories which have been established for the same purpose. The country in which these establishments have most notably increased is our great sister country, the Republic of the United

States. We can judge of this by the following details, the figures concerning which I have taken from a report on the American Psychological Laboratories published in 1895.¹

“ The new scientific movement which was born in Germany under the influence of Lotze, Fechner and Wundt and which led to the foundation of the first psychological laboratory, that of Wundt in 1879, was heartily welcomed in America. The material prosperity of the country had allowed the augmentation of the resources and the sphere of action of our universities; thanks to the growing tendency of American students to visit German laboratories, we acquired some new models of precision and depth in our researches on thought and education; already some active researches had been undertaken in other scientific domains, so that when new psychological methods were introduced amongst us, the ground was found well prepared to receive them. The first American laboratory, which has now disappeared, was founded at the Johns Hopkins University (Baltimore) in 1881 by Stanley Hall, a pupil of Wundt. It was only in existence for five years; in 1888 a period of fruitful activity commenced; three psychological laboratories were established in that year; in 1889, three; in 1890, four; in 1891, two; in 1892, five; in 1893, four; in 1894, six; and the movement continues and widens.”

At the time the report was published (1894) it described twenty-seven laboratories, all abundantly provided with professors, students and apparatus.

Let us admit that we cut a very modest figure by the side of the Americans with our two French psychological laboratories, one at the Paris School of Higher Studies, directed by MM. Beaunais and Binet, the other at the Rennes Faculty of Learning, directed by M. Bourdon, who founded it. However, it would be unjust not to consider as psychological laboratories which have done and which still do great honour to our country, such

¹ *L'Année psychologique*, Vol I, p. 210.

clinics and courses of lectures as those at La Salpêtrière, La Charité, Saint Anne's Asylum, where men such as Charcot, Luys, Demontpallien, and Magnan, surrounded by numerous and brilliant pupils, have worked so assiduously for the progress of the physiology and pathology of the nervous system and the brain and, consequently, for the progress of experimental psychology, and above all, the school of Nancy, where, under the direction of Professor Bernheim, the consistent study of the curious and obscure phenomena of hypnotism and suggestion is still pursued.

In order to complete this picture, we must speak of the tendencies of this new psychology and of the spirit directing its work.

In a general way the psycho-physiologists declare themselves completely indifferent to and unconcerned with metaphysical speculation ; they are not interested, or, at least, so they say, in the eternal and insoluble problems on which the great geniuses of humanity have hitherto vainly spent themselves ; Plato, Aristotle, Descartes, Leibnitz, Kant and Hegel. What is the nature of the soul ? What is its origin ? What is its destiny ? Questions adjourned indefinitely, which the science of relations existing between physics and morals ignore, and of which they consequently neither seek nor prepare the solution. Psycho-physiology will, therefore, be neither materialistic nor spiritualistic, any more than physics or chemistry ; it will not take sides with any of various opposing systems ; it will be neutral. A fairly large number of psycho-physiologists do observe this neutrality : all those who are engaged in the study of the most common and rudimentary phenomena of the psychological life—sensations, instinctive movements, etc. It is clear that in order to measure the sensations of hearing, touch, etc., it is by no means necessary to call

into question free-will or the existence of God. But as we are raised towards the upper regions of the intellectual and moral life, as we endeavour to submit the most delicate and noble of sentiments, thought and will to the experimental method, it becomes evident that, willy-nilly, the new psychology undergoes, although perhaps not so strongly, the divergent metaphysical influences under which was already determined the double orientation of the old.

In vain is it said that the attention of metaphysical problems cannot end in humanity. We conceive them and state them differently from our predecessors; we hope often without admitting it to ourselves, to resolve them by other methods, even if we do not believe ourselves already in possession of the solutions; but they still subsist, and from the moment that they appear to us involved in some particular and secondary question of a scientific, literary or moral character, the interest with which this question inspires us is doubled and transformed almost into a passion.

Let us, therefore, not be surprised at finding among philosophers and scientists who are interested in the new psychology, immediately they leave the details of experiments and calculus, two great opposing tendencies which have hitherto divided human thought, to which many varied names have been given and which I will, in this instance, call the *positive* and the *mystical* tendencies.

The first, I hasten to say, is that of the great majority of the new psychologists: in one sense, we may say that it is confounded with the spirit even of modern science, such as Descartes has established it, and as three centuries of work and progress have made it.¹

¹ "The Cartesian spirit still presides at the creation of certain particularly modern sciences, such as experimental psychology and positive sociology, which seek to consider psychic or social facts in their elements or measurable mathematical equivalents."² Boutreux, *Etudes d'histoire de la philosophie*, p. 294. Paris: F. Alcan.

In short, it consists in supposing that the unknown ought to be able to be brought back to the known, or which amounts to the same, that there is nothing fundamentally unknown, nothing of which we cannot say beforehand that it will be subject to such and such determined conditions, even those to which all the other objects of our knowledge have already been submitted. Consequently the positive scientist *a priori* takes exception to or, at the very least, throws a suspicion of falsity on every hypothesis of occult forces, mysterious faculties, inexplicable and incomprehensible facts, which do not permit of reduction to causes already discovered, to laws already verified in the other orders of phenomena.

But we may go still further. A phenomenon is only scientifically known when it presents these three characteristics inseparably connected one with another.

In the first place, it is of such a nature that everybody can observe and examine it and be assured of its reality, and, consequently, it is an objective phenomenon in space, which comes under the cognition of one or other of our senses,

In the second place, it is of such a nature that analysis can connect it to elements of number, form, mass and speed, and consequently it is a phenomenon which lends itself to measurement and calculus.

Finally, in the third place, it is of such a nature that it is sufficient to know and assemble the conditions on which it depends in order to be able to create it and suspend it at will as often as we wish, and consequently it is a phenomenon that allows of experiment.

Every phenomenon which is not observable or measurable, or, if you will excuse the barbarism, experimentable, is a phenomenon which cannot be scientifically known ; it escapes science, it does not exist for it. But all these characteristics, after all, reduce themselves to one only : materiality. The phenomena which are susceptible of

scientific knowledge are material phenomena and those only. From which it follows that the positive scientist, always and necessarily abstracting immaterial phenomena, if such phenomena exist, will end, if he is not careful, by becoming incapable of seeing them ; he will become, in some manner, blinded in that direction like some animal species, accustomed to dwell for a long time in darkness, whose optic nerve becomes atrophied, and he will deny the immaterial with the best faith in the world. Was it not a celebrated physiologist who said : "I have searched in vain for the soul, I have not found it under the objective of my microscope or at the end of my scalpel." Thus that which was in science merely an abstraction demanded by the method becomes with certain scientists a negation which serves as a base to a whole system, and the positive tendency seeks and finds its satisfaction and ultra-scientific expression in a materialistic metaphysic.

The mystical tendency consists in believing, according to the opinion of Hamlet to Horatio, that there are in heaven and earth more things than are dreamed of in our philosophy. No, think the mystics, it is not true that everything is known, or even can be known scientifically. There are still in nature ignored forces, which are not reducible to those already known ; they are in man even, and what is the soul, if not one of these forces which doubtless falls by its effects, at least in part, under the conditions of materiality, but is none the less immaterial ? Who indeed has seen or touched sentiments or ideas ? If we express by figures, if we measure the movements which accompany them and translate them in our organs, do not these phenomena in themselves escape all measurement and calculation ? Therefore, no one can boast of knowing the soul at bottom, and it is by observation only, experience only, free from all systematic prejudice, impartially receiving all the facts, whatever they may be, scientific or not, that we may arrive at catching a

glimpse of some of the mysterious faculties beneath the veil.

Any such intellectual disposition may appear entirely opposed to the scientific spirit, and yet I do not know if it will not also serve the higher interests of science as a useful counterbalance to the positive tendency. Let us not speak evil of the mystics. They try to keep open doors which positivists have persisted in trying to shut, and who knows if there are not hidden behind these doors most wonderful discoveries, which will dazzle future ages. At the time when electricity was not even suspected, would not the man of science who predicted such a marvel have been called a dreamer? Perhaps our physiology, our psychology, are to-day at the point where physics were before the immense part which electricity played in nature was suspected. Let us tolerate, therefore, by the side of this scientific and positive psycho-physiology, an occult and mystical psycho-physiology, certain beforehand that, however opposed their tendencies may be, they will necessarily meet sooner or later, at the same point, which can only be Truth.

More than one of our modern savants has already begun to practise this toleration. The study of these strange phenomena to which I alluded was long rejected by science and abandoned by her to charlatans and empiricists, and classed under the ancient name of animal magnetism, but she has now vindicated them and introduced them into her domain under the new names of hypnotism and suggestion. This study has by degrees led the physiologists and psychologists to explore, at first timidly, then with increasing boldness, the neighbouring regions, still so obscure and problematical, of mental suggestion and telepathy. Everybody in France is acquainted with the name of Colonel de Rochas and has heard of his remarkable experiments on the externalisation of sensibility. Is it known as generally that there is in England a very

large and flourishing society, the Society for Psychical Research, to which the principal English savants, physicists, chemists, physiologists and psychologists belong, which has undertaken the task of collecting and authenticating all instances of telepathy, predictions, second sight, etc. ? Is it known that there is an exactly similar society in America, and that in France we have a review *Les Annales des Sciences Psychiques* directed by Dr. Dariex, and under the patronage of Dr. Charles Richet, professor of physiology at the Paris School of Medicine, which is the organ of this special branch of psychology, which I propose to call by the name of *parapsychology* ?

In the following chapter we shall endeavour to fix the limits of this special or *unknown psychology*.

CHAPTER IV

AN ATTEMPT TO CLASSIFY PARAPSYCHICAL PHENOMENA

ON the confines of science there is a mass of phenomena which seem to escape all scientific explanation, which even appear to be in opposition to all that we know concerning the general laws of nature ; phenomena of which the reality has for long been disputed and is not yet generally admitted, and which, from the earliest times, have excited the curiosity and admiration of men, even their terror, more or less mingled with superstition. Science, however, has begun to explore this domain of the supernatural ; it endeavours to find a connection of causes and effects, a system of laws which shall enable us not only to understand and explain all these phenomena but also to create and modify them at will. But before studying them in detail, it is essential to give them a name which will sufficiently distinguish them from all others and to make a classification of them which will facilitate their enumeration and study. That is the object of the present chapter.

It does not seem that custom has yet caused any common appellation to obtain for all this mass of facts where hypnotism, animal magnetism, spiritism, telepathy, levitation, etc., figure side by side. We sometimes hear them called *occult* phenomena, but this description can only have a meaning for those who admit the existence of the *occult sciences*, in addition to and outside the positive sciences, which, need we say, to our way of thinking, are the only possible sciences.

Sometimes also we refer to them by the name of *psychical* phenomena, and they have been made the object of a particular group of sciences, psychical sciences, as evidenced by the name of the *Society for Psychical Research*, the title of the French review, *Les Annales des Sciences Psychiques*, and the English equivalent, *The Annals of Psychical Science*. Although this appellation has spread considerably in England, it does not seem to us to be very satisfactory, because the term "psychical" is also employed—and it would seem with more justification—as the synonym of "mental." Pleasure, sorrow, recollection, acts of the will, for example, are properly psychical states, that is to say, conditions of mind, and there is nothing in the word which enables us to restrict its application to extraordinary or abnormal phenomena.

That is why we propose the term *parapsychical*, in which the prefix *para* perfectly denotes that it relates to exceptional, abnormal, paradoxical phenomena, beyond the laws of thought and life known to us.

It can be objected that such an appellation is necessarily provisional, because when we know all the laws of thought and life, parapsychical phenomena will come in under the common rule; they will seem to us as natural and may become as frequent as the most simple and common phenomena. But, we reply, the idea that we present to ourselves at this moment of this group of phenomena is necessarily provisional; we assemble there all the facts where life and thought appear to us to be manifested by properties still inexplicable; and naturally when we come to know their laws and real causes, then either these facts will be connected with others from which we wrongly distinguish them to-day, or they will receive a new and definite denomination derived from their true nature.

It is, therefore, impossible to do anything else than give a nominal definition which is quite relative to our

present state of knowledge, or, more accurately, of our ignorance. From this point of view, we can define parapsychical phenomena as "all phenomena produced in living beings or as a result of their action, which do not seem capable of being entirely explained by already known natural laws and forces."

The result of this definition will be that all classification of parapsychical facts will necessarily be artificial. Doubtless we can attempt to group them according to the little we already know of their natural affinities; but we cannot pretend faithfully to summarise all their inter-relationships. This definition will have no other object but that of staking out, so to speak, an immense field of researches, where, without some such limitation, it would be almost impossible to see what one was about. It is from this point of view that we endeavour to make the classification which follows.

We will, first of all, divide parapsychical phenomena into two main classes. The phenomena of the first class (and perhaps it is not necessary to refer to them otherwise) include all which seem capable of explanation by the only forces already known, by supposing that these forces, in certain conditions, operate according to laws which we do not yet know, laws more or less profoundly different from those we already know; such, for example, as the phenomena of hypnotism and suggestion. The phenomena of the second class, on the contrary, seem to imply the intervention of forces still unknown, agents distinct from all that science has yet discovered and studied, such, for instance, as the phenomena of animal magnetism, spiritism, telepathy, etc.

All contemporary scientists admit the phenomena of the first order.¹ Almost all reject the phenomena of

¹ We may still meet, we believe, a doctor of medicine who doubts the reality of hypnotism or suggestion, maybe even denies it; many, in any event, who will deny its importance.

the second order, or allocate them, in so far as they are real, amongst the phenomena of the first. It will therefore be permissible, at the present time, to call the first *scientific* and the second *extra-scientific*. The first even, in the opinion of certain scientists, have already ceased to appear exceptional and abnormal, and we scarcely have the right to qualify them as parapsychical.

Be that as it may, we shall distinguish in the first order two groups, more or less distinct, for which we must invent names and call the one *psychopathic* (two Greek words, *psyche*, soul; *pathos* modification) and the other *cryptopsychic* (from *cryptos*, hidden and *psyche*, soul).

I

Psychopathy includes all phenomena which have as their essential starting-point a certain modification, either of the mental, or of the nervous state of the subjects in whom they are produced, and which consist either in the exaltation or in the abnormal inhibition of the psychological faculties or the vital functions. Within this definition come, unless we are mistaken, all the phenomena of suggestion and hypnotism.

The same definition makes it clear that psychopathic phenomena can be produced in two different ways.

Sometimes they have for their sole and sufficient cause a certain modification of the mental condition of the subject, most frequently determined by the operator's words; these are the phenomena of suggestion, so carefully studied by the School of Nancy, which will not recognise any others: we remember that statement of Professor Bernheim "There is no hypnotism, there is only suggestion." For instance, *without looking at a person, or touching him*, I say to him, "In less than five minutes, your legs will not be able to support you, you will

fall on to your knees," and he falls. "This armchair attracts you, you will be compelled to go and seat yourself upon it," and he does so. "You have forgotten your name, profession and address," and he no longer remembers them. "You are very hot, very cold; you want to vomit, laugh, cry," etc., and he experiences all those sensations. "Go to sleep, sleep," etc., etc., and he sleeps. The suggestion may not be verbal, it may result from gestures, facial signs, etc., it may even rise spontaneously in the subject's mind and be an auto-suggestion; in every case it is a *mental* cause, a thought insinuated in or imposed on the mind, which seems to be the starting-point of all subsequent phenomena.

The facts of *suggestive psychopathy* being, at least in appearance, the most simple of all, are evidently what we ought to study in the first place, and as they are always found more or less in those which follow, we ought to ask, in fact, if they are not sufficient, as the School of Nancy contends, to constitute and explain them entirely.

In other cases, it seems that the cause of the phenomena may be rather physiological, and consist in a modification of the nervous centres, produced either by prolonged gazing on a brilliant object or by pressure on a part of the body, or by some other action of a *physical* nature; and these are those *hypnotic phenomena*, which the School of La Salpêtrière, taking up Braid's tradition, has principally studied and which it regards as inseparable from the morbid diathesis of the nervous system which is called *hysteria*. According to this school three clearly characterised forms are assumed: lethargy, catalepsy and somnambulism, and far from being the results of suggestion they rather become the causes, in the sense that every hypnotisable subject is necessarily suggestible although all kinds of phenomena entirely independent of his suggestibility are produced (for example, the phenomenon

of neuro-muscular hyper-excitation in lethargy, that of transfer of contractures by the action of the magnet in catalepsy or somnambulism, etc.).

In the present state of science, it is very difficult to decide the dispute between the partisans of suggestive psychopathy and the partisans of hypnotic psychopathy (which might, perhaps, be more appropriately called hystero-hypnotic psychopathy).

II

Cryptopsychy includes all phenomena where an intelligent action seems to be manifested, a psychical action, without, however, the subject in whom it is manifested being in any degree conscious of exercising any such action. More or less closely allied to psychopathy, it is, however, distinct and can be produced without it. The prophetic utterances of the Camisards are an historical example of spontaneous cryptopsychy. But the best type of this class of phenomena is *automatic writing*. A person holds a pen in the right hand, and without being conscious of what is being written, the hand writes a succession of phrases which have sense and often even reply correctly to questions put. M. Pierre Janet in his work on *Mental Automatism* has begun the study of cryptopsychy; we hope that he will collect all the divers forms into the unity of a general theory. Is it necessary to say that *spiritism* enters, at least partly, into the definition of cryptopsychy, and that it is even one of the forms which is most important and most worthy of study?

The phenomena of the second order which still wait at the portal of science seeking admission, and which seem to involve forces as yet unknown, may be arranged in three groups which we will call *psychodynamic* (*psyche*,

soul; *dynamis*, power); *telepsychic* (*tele*, far away; *psyche*, soul); *hyloscopic* (*hyle*, matter; *scopein*, to examine, to perceive).

III

Psychodynamics include all phenomena where a living being appears to act either upon other living beings, or even on raw material, through the intermediary of a force *sui generis*, distinct from all other known forces, although analogous to radiating or circulating forces, such as heat, light, electricity and magnetism. When this action is exerted at great distances, without visible intermediaries, the phenomena produced are telepsychical. There is, therefore, only a difference of degree, as we shall see further, between the two groups of phenomena of the second category.

Psychodynamic phenomena are very varied, and it will evidently be necessary to subdivide them.

Let us first of all put on one side—without taking responsibility in any way for their reality—all phenomena where the influence is supposed to come, not from some living being under our observation (man or animal), but from a spirit belonging to the other world, those which constitute what we may term spiritual psychodynamics, as we might just now have put on one side spiritual cryptopsychics. But before admitting these two classes of facts, it is clearly necessary to see if they cannot be explained by a more simple hypothesis, to wit, by the unconscious action of the subjects or mediums who contribute to their production.

Whether we admit them or not, it is expedient in every case to distinguish in psychodynamics as exercised by living beings two principal forms, according as the force emanating from the mind acts on a living organism (*vital psychodynamics*) or on mere matter (*material psychodynamics*).

dynamics). Almost all phenomena included under the term *animal magnetism* (as far as they are distinct from the phenomena of hypnotism and suggestion) fall within this double category. Let us pass them rapidly in review.

VITAL PSYCHODYNAMICS.—A. *Results produced in man.* The simplest effect is that which seems to have been discovered by M. Moutin and which we have ourselves tested on many occasions. The two outstretched hands are placed lightly on the shoulder-blades of a person without exercising any pressure, and then slowly withdrawn; the person is thereby attracted often with such force that he loses his equilibrium. It is not always necessary to apply the hands. In some subjects, after the first occasion, the attraction is felt when the hands are held at a distance of from one and a half to two inches away. It is of course necessary to abstain from informing the subject of the result which is expected to ensue from this operation. The experiment will also very often succeed when the hands are applied to the epigastrium. In the same way the simple application of the hands to the shoulders accompanied by the wish to make the subject fall, brings about the desired result as quickly (particularly if he has already shown himself sensitive to attraction). The same effect can be obtained by applying a hand to the base of the spine and pointing the fingers of the other hand towards the knee.

With extremely sensitive subjects it is sufficient to place the open hand behind the elbow, in order to determine the movements of the arm and set up a real attraction—and that without the subject being able to perceive anything beyond the result produced. In the same way the contact or the approach of the operator's hands produces in the subject phenomena of numbness, contracture and adhesion, which seem to be the results of this unknown force.

It is also to this force that magnetisers attribute the effects of *passes* to awaken or put subjects to sleep, and the majority of them admit that like electricity or magnetism, it is *polarised*, that is to say, it is at once positive and negative. (We know that Dr. Luys has recently given his support to the already ancient theory of the dynamic polarity of the human body.)

It goes without saying that the majority of these phenomena are either disputed by the savants of the Schools of Nancy and La Salpêtrière, or are looked upon by them as the simple effects of suggestion and hypnotism. We can, however, make the same criticism on all the phenomena of which we shall have occasion to speak.

Vital psychodynamics do not produce external effects only; they can also act in the interior of the organism, and the series of effects which they then produce fall under the heading of *curative magnetism*, upon which Monsieur A. Bué has published a very remarkable work. Thus, in placing the hands on a diseased organ, or by making passes over it, even at a distance, the vitality can be re-established. M. Liébault has made some experiments of this nature on quite young children, and he has come to the conclusion that a living being can, merely by his presence, exercise a salutary influence on another living being, quite independently of suggestion.

It is, however, necessary to say that suggestive psychopathy seems itself to imply a kind of internal psychodynamics. How could the thought of healing heal, if the brain, under the influence of this idea, did not constantly send into the diseased organs some currents which restore or regularise the functions?

B. *Effects produced on animals.*—These have been less frequently tested than the effects produced on men; they are, however, of the same nature, but they might be, perhaps, more conclusively established, the part

played by suggestion being much less, often indeed nil.

C. *Effects produced on plants*.—These have again been less frequently experimented upon than animals. Nevertheless, we shall find some very curious examples in M. Bué's work to which reference has just been made. They principally consist in an increased vitality produced by the action of passes. Thus etiolated plants will regain their vigour, some fruits will ripen a month earlier and become nearly a third larger than others borne by the same branch but not submitted to this influence.

MATERIAL PSYCHODYNAMICS.—In material psychodynamics it is expedient to distinguish two classes.

A. *Indirect Psychodynamics*.—The action exercised by the operator on a material object is not manifested directly by an observable alteration in the condition or properties of this object, it is only revealed in the effects which it produces in living beings, principally human beings, and, in particular, in *sensitives* or *subjects*. We may instance the curative effects which magnetisers attribute to magnetised water.

On the other hand, we have ourselves seen a subject unable to touch, without experiencing sensations of burning or numbness, objects magnetised unknown to him and when he was not present.

B. *Direct Psychodynamics*.—Here the effects produced on matter are directly visible to all observers; they consist in movements and modifications impressed on the actual substance of bodies. A part of mediumistic phenomena (that is to say, those produced by mediums) comes within this category. We may ask if the movements of table-turning have not, as their sole cause, the unconscious impulses given by the spectators; but when the table is raised without contact, as M. de Gasparin claims to have verified in his experiments at Valleyres, it must be granted that mechanical forces are

not sufficient to account for such a phenomenon and a psychodynamic action must be admitted. The same remark applies to all the experiments made by Sir William Crookes with Home, assuming that the English savant took all the necessary precautions to ascertain scientifically the facts he reported.

To the phenomena of *Levitation* must be added the still more extraordinary phenomena of *Materialisation*, where by a sort of condensation of parapsychical force, visible and tangible objects may be created, similar in every respect to bodies and even to living bodies,—as Sir William Crookes related in his almost incredible story of Katie King.

IV

Telepsychical phenomena form a group which it is difficult to limit and divide, because they include some of the preceding phenomena as well as some which we shall presently describe. They imply an action exercised or undergone at great distances or, at least, across some intervening obstacles.

We have elsewhere given (*Revue encyclopédique* of April 15, 1893), an enumeration which we here reproduce :

1. *Telepathic* Facts specially studied in England and dealt with in *Phantasms of the Living*, *Telepathic Hallucinations*, and in France in *Les Annales des Sciences Psychiques*. Their main feature is that a person suddenly sees an appearance of a relative or absent friend most frequently at the moment when the latter is in danger of death.

2. Facts relating to *Second Sight*, *Clairvoyance* or *Lucidity*, absolutely denied by official science (as proved by the recent challenge of M. Pouchet) but which the majority of ancient magnetisers believed to have been verified many times; a person, most frequently in a

state of somnambulism, sees what is happening beyond the range of normal vision (either within the organism or in a more or less distant country).

3. *Transmission of sensations* or even of the corporeal conditions which accompany them. The following is an illustration given by M. Pierre Janet. "Mme. B. seemed to experience the majority of the sensations felt by the person who sent her to sleep. She thought she drank when this person drank. She always accurately recognised the substance I put in my mouth and perfectly distinguished whether it was salt or sugar." In this category, to which we propose to give the name of *telesthesia* (from the words *tele*, distance and *aesthesia*, feeling) are included the facts, still disputed, which M. de Rochas has enumerated under the name of *externalisation of sensibility*.

4. *Transmission of ideas*.—This is properly the phenomenon of *mental suggestion*. The subject divines and understands the unexpressed thought; for example, he replies to questions put mentally. Such a subject, according to the Marquis de Puységur, was the well-known Victor Vieler: "I have no occasion to speak, I think before him, he hears me and replies."

5. *Transmission of will*.—The subject obeys the unexpressed will of the operator, when he understands it, and there is at the same time transmission of ideas, even when they are unaccountable to him, and this appears to be the case with Pickman, if we admit the good faith of the experiments made with this medium. We include under this heading sleep produced at a distance as in the well-known experiments at Havre, where MM. Gilbert and Janet put their subject to sleep at distances varying from six or seven yards to nearly two miles.

V

The last group of our classification *hyloscopy* includes all phenomena where matter appears to exercise on living beings, particularly human beings, an action which does not seem entirely explicable by its already known physical or chemical properties, and which seem, in consequence, to reveal a force irreducible to any of those which science has up to this time studied. As will be seen, hyloscopic phenomena are in a sense inverse and complementary to material psycho-dynamic phenomena. The following are the principal types :

1. *Influence of movement*.—It is sufficient to go round a subject from left to right, *without informing him of the result expected*, in order that at the end of a certain number of turns he may lose tactile sensibility and memory. On continuing to turn he successively passes into states of catalepsy, somnambulism, etc., and he again passes through the same conditions in an inverse manner back to the normal state if the operator turns from right to left. The same effect may be obtained by rotating the subject on his own axis or around a fixed point or by rotating a material object around the subject.

2. *Influence of atmospheric currents*.—Certain very nervous persons can foretell changes in the weather, even a long time previous to their occurrence ; they may be called living barometers of extreme sensitiveness.

3. *Influence of underground currents*.—Every one has heard of water diviners and their well-known divining rod. If these facts are as stated they come under the heading of *hyloscopy*.

4. *Influence of terrestrial magnetism*.—This is still very obscure. Certain subjects appear to feel it. It contributes, perhaps, to form the sense of direction, the instinct of orientation which many naturalists attribute to different species of animals.

5. *Influence of the magnet.*—The partisans of suggestion deny it ; it is admitted not only by the ancient magnetisers but also by the whole school of hypnotism (Charcot and Luys). The magnet placed in contact with the subject, but unknown to him, will cause him to experience not only sensations of chill, numbness, etc., but objective phenomena, such as contracture, sleep, transfer of motions and attitudes, etc. This influence may even receive therapeutic applications. We shall discover without doubt, some analogous effects produced by electricity, heat, light, sound, crystals, etc.

6. *Influence of metals.*—This feature has been studied by Dr. Burq, under the names of metalloscopy and metallotherapy. We shall find an interesting account of his observations and experiments in two lectures given by Dr. Dumontpallier in 1879 at the Hôpital de la Pitié.

7. *Influence of various substances.*—We place under this heading (1) Action attributed in homeopathic medicine to very small globules, the effect of which may be said to be in inverse ratio to their size, and which, if it is real, evidently implies a force different from all known forces. (2) Action of medicaments at a distance, studied by MM. Bourru and Burot, which experiments were so much discussed. (3) Is it necessary to mention again the action attributed by Mr. Brown-Sequard to his organic extracts ?

Such is the classification of parapsychical facts which will serve as a framework for their study. We do not claim to have exhausted the list ; moreover, we do not pretend to guarantee the absolute reality of all those which we have given as examples. The future will doubtless discover others ; it may also show that many of them have deceived the early observers ; we shall none the less have fulfilled our task if all the facts, known or to be known, in this class of research shall find their place naturally in the classification which we here propose.

We would, however, remark that in classifying parapsychical phenomena, we have at the same time classified the science which studies them in such a way that the whole of *parapsychical sciences* may be thus divided : (1) *psychopathy* ; (2) *cryptopsychy* (sciences of the first degree) ; (3) *psycho-dynamics* ; (4) *telepsychy* ; (5) *hyloscopy* (sciences of the second degree) ; the same name may serve at once for each of these groups of phenomena and for the science of which it constitutes the object.

VI

The preceding attempt at classification was expounded by us for the first time in 1893 in the *Annales des Sciences Psychiques*, and we have now reproduced it in its original form.

Our opinions have, however, evolved since that time, and we are disposed to make certain alterations in this classification which, without departing from the main lines, will, we believe, help to extend it and make it more complete.

It will be noticed that there is not a special place for all those facts which the majority of people group together under the equivocal appellation of *spiritism*, and which, to many of our contemporaries, is the most important group, if not even the most interesting, of psychical phenomena.

This omission is explained by the following reasons.

If we take away all hypothesis as to the origin of spiritualistic or mediumistic facts (and in employing these two names we ourselves abstract all hypothesis of this class) it seems first of all that these facts, taken by themselves, may fall into one or other of the different classes—psychopathy, cryptopsychy, psychodynamics, etc., which we have previously enumerated.

For example, is not the state of mediumistic trance a simple phenomenon of spontaneous psychopathy, a case of auto-hypnotisation or of auto-suggestion, quite of the same character as the facts of hypnotism and experimental suggestibility studied by the schools of La Salpêtrière and Nancy ?

In the same way, are not the messages obtained by the medium, whether by means of the table or by automatic writing or by any other process, phenomena of spontaneous cryptopsychy, comparable with the facts of projection of the double, artificially provoked by Professor Pierre Janet and described by him in such a masterly manner in his remarkable works *Automatisme psychologique* and *Névroses et Idées fixes*, etc.¹

Again the movements of levitation, transference of material objects produced by a medium, the appearance of lights and forms, materialisations, etc., which we observe or which we think we observe in certain spiritistic séances, are they anything else than the phenomena of spontaneous psycho-dynamics, which science will doubtless reproduce experimentally if they are real, when it shall have succeeded in determining the necessary and sufficient conditions ?

Finally, can we see anything else than the phenomena of spontaneous telepsychy, differing only in the special circumstances in which they are produced, in the facts of thought reading and clairvoyance which we find so frequently reported in the accounts of spiritistic séances ?

From this analytical point of view the phenomena of spiritism or mediumship do not constitute a distinct class of parapsychical phenomena but simply a very variable and often very entangled complexus of parapsychical phenomena belonging to the orders already indicated : psychopathy, cryptopsychy, psycho-dynamics, etc.

¹ Published by Félix Alcan, Paris.

It is because we took exclusively this point of view that our first attempt at classification does not reserve any special place for these phenomena.

But this manner of looking at things has the great inconvenience of disturbing the natural unity of the whole of the phenomena and of disregarding the real solidarity uniting them, because it tends to disperse them and, so to speak, submerge them in the midst of very different phenomena without taking into account the common characteristics which give them so original and so distinct a physiognomy in the whole system of parapsychical phenomena.

All, in fact, show those two characteristics which we do not observe in others : (1) of being *essentially spontaneous*; (2) of employing (at least hypothetically, fictitiously) the intervention of *personalities* which present themselves as distinct from all the visible personalities present in the phenomena themselves.

In the first place, these facts differ from the facts of hypnotism, suggestion, animal magnetism, etc., in that they cannot be obtained at will by experiments properly so called. It is quite wrong to give the name of experiment to the attempts at observation which we may make. "One of the most curious features of psychical phenomena," says Maxwell,¹ "is their apparent independence. The experiments lead us; they do not allow themselves to be easily led. Often they seem to obey some will other than that of the persons present," and the same writer warns us against the mistake which consists in supposing "that psychical phenomena can be observed at will." "Whenever a paid medium," he says, "gives regular séances, there are a hundred chances to one of downright fraud. If there be a positive feature in these supernormal facts, that feature, in my opinion, is their apparent irregularity. I have been able to experiment

¹ *Metapsychical Phenomena*, p. 37.

with intelligent, well-educated mediums anxious for a thorough investigation of their powers; I have made very many experiments with them, and I have observed that often whole weeks passed away without a good séance; at other times, the force was so abundant that phenomena were forthcoming without a formal séance."

In the second place—and this second characteristic is closely connected with the first—these facts suggest, emphatically, to all those that observe them, whether implicitly or even explicitly, the hypothesis of invisible personalities, distinct from those of the medium and spectators, who intervene in their production. In other words they *appear* themselves to have a personality; or rather they attribute to themselves, they vouch for themselves actually having a distinct personality. That this appearance may be illusory or conformable to reality, that this affirmation may be true or false, is a point on which opinions may be and are divided; but that these appearances and affirmations exist, and that they are characteristic of this class of facts, all observers agree in recognising. According to Maxwell:—

"One of the most curious facts which so-called 'psychical' experiences reveal, is that to a certain extent the manifesting force appears to be intelligent. . . . Generally, the manifestations are attributed to a deceased person, known or unknown to the sitters."

Again he says:—

"I will give the name of 'personification' to the manifesting intelligence, whatever this may be. . . . We can only form hypotheses as to its essence; and the scepticism which my observations, taken as a whole, have instilled into me, may be ill-founded; therefore it is better to treat it with the same courtesy we show to our fellow-experimenters. This prudent attitude is the most profitable. In practice, I have the same respect for the personi-

fication as for the medium. . . . I address it by the name which it has chosen for itself and I find I do well to make it clearly understand what I am seeking; whatever in reality the personification may be, its co-operation seems to me to be indispensable.”¹

Such being the characteristics under which mediumistic or spiritistic phenomena are presented to us, it seems desirable to give a separate place to them in a general classification of parapsychical phenomena.

This classification ought, therefore, to admit, in addition to the two orders we have already included, a third order specially reserved for mediumistic phenomena, and these then would be :

1. Phenomena which *seem* capable of explanation by forces already known, by supposing that these forces operate, in certain conditions, according to the *laws* which we do not yet know, laws more or less profoundly different from those we already know.

2. Phenomena which *seem* to imply the intervention of *forces* still unknown, agents distinct from all those

¹ “An attentive observation of the facts shows, that in psychical phenomena we observe the emerging of personifications which may be secondary personalities, but which in really clear cases present particular features, and seem to possess information which is inaccessible to the normal personality. They may co-exist with the latter, without any disorder manifesting itself in the sensitive or motor spheres; in other cases they encroach upon the normal personality, which may either lose the use and sensation of one member, or be deprived of several members. Finally, the personification can invade the whole of the organism and end in *incarnation*, a phenomenon of apparent possession. When it reaches this maximum development the personification manifests a remarkable autonomy, and appears to be much less suggestible than in the intermediate stages of its evolution. . . . What are these personifications? I do not know. The problem they raise in some cases is extremely difficult to solve. I can only say that they do not appear to me to be what they claim to be. Is it collective consciousness? Is it an illusion? Is it a spirit? Everything is possible, to me nothing is certain save one thing, namely, that we must not put our trust in them.”—MAXWELL.

which science has already discovered and studied but which, we ought to add, belong normally to our world, are included in the permanent series of forces and agents which we call nature, and are, in a word, intra-natural.

3. Phenomena *seeming* to imply the intervention of forces, doubtless not super-natural but extra-natural, which do not normally belong to our world, but, in some way, make an abrupt irruption into nature from some plane of existence foreign to that on which we move.

It will be expedient, perhaps, to clear our minds by designating these three orders by different names.

All the phenomena of the first have a certain resemblance to phenomena observed during sleep; often even they are accompanied by sleep or a state analogous to sleep; we propose therefore to call them *hypnoid* phenomena.

The hypothetical force or forces which seem to manifest themselves in all the phenomena of the second order present singular analogies, which all observers have noticed, with magnetism and electricity; these phenomena may, therefore, be called *magnetoid* or *electroid*.

Finally, the phenomena of the third order seem to imply, as we have seen, an intelligent force, a spirit; we may therefore give them the name of *spiritoid* phenomena.

This classification, even thus defined and completed, is none the less essentially provisional, because, as we have remarked, it is founded from beginning to end upon the *appearances* which parapsychical phenomena offer to our observation. It must not be regarded as a summary of scientific knowledge of these phenomena, because it is precisely this knowledge which we are trying to establish, but simply as an outline of which we believe we stand in need in order to help us in this study.

Thus it is very possible that the deeper knowledge of spiritoid phenomena will one day lead us to the conclusion that they can be reduced entirely to hypnoid and magnetoid phenomena, and it is in this direction that we ought

to push our researches ; but we have no right to postulate this hypothesis at the outset as *a priori* evident, because the opposite is equally possible. We may say as much of magnetoid phenomena with regard to hypnoid phenomena and on the last analysis of the whole of parapsychical phenomena with regard to psychical, or normally psychological phenomena.

PART II
HYPNOID PHENOMENA

CHAPTER V

SUGGESTION AND HYPNOTISM

I

THE word *suggestion* has taken, during the latter half of the nineteenth century, a special meaning, and at the same time its usage has become exceedingly generalised. It serves to designate a whole order of phenomena, the majority of which are still, whatever the theorists of certain medical schools may say, very imperfectly known or very obscure, and are attached by close ties to the phenomena of fascination, hypnotism, or even to those of animal magnetism, described or studied more or less scientifically by some observers from the end of the eighteenth, and commencement of the nineteenth centuries.

In the ordinary acceptance of the word, there is suggestion each time that a person evokes, most frequently by speech, in the mind of another person an idea to which the latter has not been led by the natural course of his thought, an idea susceptible of exercising some influence on his feelings or conduct.

But in this sense we can by no means prejudge the final effect produced by the idea thus evoked; it may be that it determines certain sentiments and acts conformable to this; it may be also that it is dismissed either immediately or after examination by the person to whom it is suggested; but in the one as in the other case, the word does not necessarily imply the idea of an irresistible influence.

On the contrary, in its new acceptation the word

suggestion implies the idea of an *involuntary or even automatic obedience* of the person to whom the idea has been suggested, and what is remarkable in this phenomenon is the subject's incapacity not to do or not to believe what he is told. For that reason the word *subject* has come to be applied very frequently to denote the state of subjection created by suggestion of this character, and the name of *hypotaxy* (literally subordination or submission) was given by Durand (de Gros) to the condition of the nervous system which makes this obedience possible, forced as it is upon the subject by suggestion.

Nevertheless between these two interpretations the transition may be made unconsciously and the great difficulty is to know in what degree it is expedient to distinguish them and oppose one to the other.

The tendency of the School of Nancy is to confound them; thus Dr. Bernheim defines suggestion as "the act by which an idea is introduced into the brain and accepted by it." Therefore this school recognises suggestion as in some manner permeating all human life: example, education, eloquence, moral authority, are so many forms of suggestion which do not differ in essence from hypnotic suggestion.

The School of Paris, on the contrary, endeavours to limit suggestion to an order of facts, more or less exceptional and abnormal. According to Dr. Janet: "it is the operation by which, in the case of hypnotism or perhaps in certain waking states yet to be defined, we can by the assistance of certain sensations, particularly by the assistance of speech, induce in well-disposed nervous subjects a series of phenomena, more or less automatic, making them speak, act, think, feel, as we wish; in a word, transform them into machines."

It is important therefore for the sake of clearness to distinguish between two kinds of suggestion; on the one hand *ordinary suggestion*, which is produced in the waking

state, which the subject may normally resist, or which he obeys either by a more or less considered consent, or as the result of his natural credulity or docility; and *hypnotic suggestion*, which is produced during hypnosis or during a waking state, more or less analogous at base to hypnosis, which he is unable to resist, although he may wish to do so, and which he obeys apart from all reflection, as the result of a credulity and docility in some way artificial and abnormal.

For the same reason it is expedient to distinguish between two kinds of *suggestibility*; the one *ordinary* which is confounded with the natural tendency which all men have more or less to believe and to do what is told them; the other *hypnotic* which is peculiar to some individuals or rather to some conditions of the nervous system and which is an artificial incapacity to control ideas and resist suggested impulses.

From this point of view the characteristic of the second kind of suggestion is its connection with the state or disposition *sui generis* of the nervous system, the hypnotic condition or disposition. In other words suggestion thus understood is the function of hypnotism and it may therefore be defined—at least, partially—as “a condition which develops a special suggestibility, absolutely automatic and irresistible.”

If we wish to define hypnotism more particularly, it is evidently necessary to characterise it in itself, taking it away from all relation with suggestion and suggestibility: but this definition will only be possible after a more complete study of the whole of its characteristics and effects.

The name even which we give to it and which assimilates it to sleep, shows that it is generally conceived as “a condition of torpor or cerebral stupor, where the majority of the higher functions are suspended or inhibited.”

From the psychological point of view, hypnotism has been defined either as a mono-ideistic condition (a contraction of the field of consciousness to only one impression or idea), or as a dissociation of the personality (a disaggregation of the states of consciousness, which, in the normal waking state are co-ordinated amongst themselves and subordinated to a central and dominant state).

The School of Nancy only gives a secondary and provisional value to these definitions. According to it "suggestion is the key to all hypnotic phenomena." In other words hypnotism is the function of suggestion.

The majority of these partisans only employ, or think they only employ, *verbal suggestion* in order to produce hypnosis, that is to say some process of persuasion or sometimes of intimidation simply destined to bring the natural credulity and docility of individuals upon whom they are operating into play.

From this point of view, there will therefore be continuity between these three terms : (1) ordinary suggestion and suggestibility; (2) hypnotism (induced by the employment of these); (3) hypnotic suggestion and suggestibility; and consequently, we could, strictly speaking, pass immediately from the first to the third terms, that is to say, from moderate and normal suggestibility to exaggerated and abnormal suggestibility without necessarily passing through the intermediate stage of hypnotism, which moreover is nothing more nor less than sleep, identical in essence with ordinary sleep but induced by suggestion.

We have not yet come to a decision between these two interpretations.¹

¹ Whilst remembering that in an order of researches so delicate, whoever has not observed and experimented personally ought to be very reserved as to either affirmation or negation, we should be more disposed to prefer the interpretation of the School of Paris. It was in this sense we replied to the questions of Dr. Crocq, the younger,

Let us, therefore, content ourselves by saying that, in order to demonstrate the second, a whole series of experi-

upon the two following points : (1) Is hypnotic sleep of the same nature as ordinary sleep ? (2) Is hypnotic sleep always due to suggestion ? (See *L'hypnotisme scientifique*, by Dr. Crocq, 1896, pp. 242, 245.) We here reproduce those replies.

1. No, hypnotic sleep does not seem to us to be of the same nature as ordinary sleep. It differs from it considerably by the abnormal suggestibility which it develops in nearly all subjects, and this difference is probably connected with a yet more profound difference in the general condition of the nervous system and of the organism. Here, as elsewhere, nature doubtless obeys the law of continuity; the two sleeps may be connected one with the other by an infinite number of degrees, but it is the same in sleep and waking. Moreover, the singular experiments of Dr. Moutin, hardly known to the scientific public, prove that the majority of phenomena known as hypnotic (suggestions, contractures, cataleptic attitudes, etc.) may be obtained by very simple experiments in a large number of persons who have never been put to sleep and who will, perhaps, never be put to sleep in their lives, and who remain perfectly awake throughout the whole of the experiments. In my opinion the truth is that the nervous system is susceptible of a large number of modalities, more or less characteristic, of which the two extreme forms are waking and sleep, and both serve as types whereby we may understand and gauge all others; but these are not strictly speaking either waking or sleeping, whatever resemblance, more or less marked, they may present to one or other of these types. The majority of these modalities remain under control with the great majority of individuals; they only appear, and especially are only determined with some, in conditions, more or less accidental, which experience alone can teach us.

2. Suggestion cannot, in my opinion, be the absolute and sufficient cause of the phenomena attributed to it, but is only the occasion, the determining condition of it. The real cause seems to be a certain modification (the nature of which is still unknown) of the circulatory and nervous condition of the cerebral centres and of the cerebro-spinal system. Whenever this modification is not produced I say in vain to someone : you cannot open your eyes, you cannot bend your arms or your legs; he sneers at my suggestion. But there is *a priori* no reason to suppose that this modification can only be produced by suggestion itself. Where it is possible (because it is not so with everybody, and it is also necessary that the subject shall be predisposed) it seems rather to be produced by a large number of various causes, at least, by all which cause a disturbance, sufficiently deep, in the usual equilibrium of the system. On the other hand experiment proves that purely physical practices, as for example, prolonged gazing on a fixed point (the experiments of Braid, Grimes and Dr. Philips) produce it very rapidly in a large number of subjects and prepare them to undergo the effects of suggestion.

We borrow from Dr. Moutin's work, *Diagnostic de la suggestibilité*,

mental proofs and counter propositions is necessary which has never been done with the desired strictness by the theorists of the School of Nancy.

the following observations which seem to prove that certain manœuvres, certain sensations, have by themselves the property of producing hypnosis independent of all suggestion.

"I sent," said Braid, "for one of my servants, who knew nothing of mesmerism, and by the instructions I gave her, made her believe that I wanted her fixed attention to superintend a chemical experiment before preparing a medicament. She was familiar with these instructions and was, therefore, not astonished. Two minutes and a half later her eyelids slowly closed with a vibratory movement; her head fell on her chest, she drew a deep breath and was at once plunged into a heavy sleep."¹¹

Dr. Lajoie (of Nashua, New Hampshire) reports the following fact: "I was called, some sixteen months ago, to a child that had slept for twenty hours. The parents, who were greatly alarmed, asked me the meaning of this. I awakened the child (who was twelve years of age) with difficulty by suggesting the idea of waking. This boy showed me a shining ball which was on the table: 'I amused myself,' he said, 'by trying to look at the sun which shone on this ball; I became tired and recollect nothing more.'¹² There was evidently no suggestion other than that due to fatigue (?)."

Another case of the same character was observed by Dr. Auguste Voisin. It occurred in a young lady of twenty years of age, accustomed to convulsive attacks, who had been hypnotised by means of Dr. Luys' rotating mirror without any suggestion. In the same way, Dr. Crocq (*Hypnotisme scientifique*, p. 251) relates how he hypnotised an hysterical subject at the Molesbeck Hospital by a simple fixed gaze; it was not known at the hospital that he was occupied with this question, and no experiment of this character had been attempted there. This sick person showed from the first sitting real somnambulism with complete unconsciousness. "Unconscious suggestion is not possible in these conditions," said Dr. Crocq, and he added, "Since then it has frequently fallen to my lot to put subjects to sleep, by prolonged gazing at a brilliant object, who were absolutely ignorant of what was expected of them."¹³ "Finally, the hypnotising of animals is with difficulty explained by the hypothesis of suggestion."¹⁴

It does not, therefore, seem possible, Dr. Moutin concludes, to confine hypnotism to suggestion; the facts are connected but distinct, and they are not necessarily in proportion one to the other. We find, in fact, some individuals who are suggestionisable in the highest degree, and yet who cannot be hypnotised; and, on the other hand, we sometimes meet with individuals who are hypnotised with great ease, and on whom suggestion has no effect. All these anomalies, which have not been sufficiently studied, prove, it seems to us, that it is not wise to be in haste to identify hypnotism and suggestion, as the School of Nancy has too readily done.

The only methodical study of normal suggestibility that we know is that made by M. Binet in his remarkable work on *Suggestibility* where he relates a number of observations and experiments, principally made with children in primary schools. He thinks " that the word ' suggestibility ' agrees with several phenomena which we ought provisionally to distinguish, and which are as follows: (1) obedience to a moral influence coming from a strange person; (2) tendency to imitation; (3) influence of a pre-conceived idea which paralyses the critical sense; (4) expectant attention or unconscious errors of a badly controlled imagination; (5) sub-conscious phenomena which are produced during a state of distraction or following any event whatever, which has caused a division of consciousness. Unconscious movements, Cumberlandism, table-turning and spirit-writing belong to this category."

Hypnotic suggestibility certainly covers a more or less large variety of different phenomena.

Without wishing to enumerate them all, let us first define *suggestion properly so called*, which almost corresponds to the two first terms of Binet's series already quoted, and *auto-suggestion* which corresponds to the three others.

In the first case the idea is presented to the subject by another person; in the second it arises spontaneously in the mind as the result of circumstances. An intermediate case of very frequent occurrence is that in which the operator involuntarily suggests to the subject by inducing him unconsciously to obey an auto-suggestion. These unconscious and indirect suggestions are very frequent in all hypnotic experiments and the School of Nancy has very rightly brought out their importance.

From another point of view we distinguish *positive* suggestions which cause the subject to have a certain perception, to commit a certain act, etc., and *negative*

suggestions which, on the contrary, suppress perceptions or prevent a pre-determined act.

If we consider the means employed for suggestion, we shall distinguish between *oral* or *verbal* suggestion, which is made by speech, and suggestion by *gesture* or any other species of sign.

On the other hand oral suggestion may be *imperative* or simply *affirmative*, according to whether the operator gives the order to the subject or is content to state that the subject will experience certain sensations or perform certain actions.

Suggestions may also be classified according to the nature of the ideas suggested : (1) suggestions which act on sensory impressions or more or less complex perceptions ; (2) on intellectual acts of memory, judgment, and reasoning ; (3) on the idea of personality ; (4) on voluntary acts ; (5) on physiological functions whether to disturb them or to re-establish their regular exercise.

Finally, suggestions in their connection with hypnotism have been divided into *intra-hypnotic* suggestions, or really hypnotic and *post-hypnotic* suggestions, the first being made and accomplished while the subject is in an hypnotic condition ; the second being made while the subject is in that condition but accomplished after he is awakened and often after a long interval. In this case, the subject has no remembrance of the suggestion made, although he faithfully executes it.

Is it necessary to admit another kind of suggestion, differing from all the preceding, to wit *mental* suggestion, when the idea is suggested without the spoken word, gesture and visible sign, by a simple act of thought or effort of the will ? First of all, there is in connection with this a question of fact which is still debated ; but, once the fact is admitted, it does not seem easy to bring it within the bounds of hypnotic suggestion, at least, if we wish to have regard to its essential characteristic.

What is typical in suggestion is not the affirmation which I assert before the subject and which he hears, it is the immediate, irresistible necessity which compels him to believe or to obey me. But, in so-called mental suggestion, to tell the truth, it does not much matter if the subject obeys or believes me, the important and also the extraordinary thing is that he perceives and receives my command and my affirmations, although I may be away from him and even at a considerable distance, as was the case in the well-known experiments at Havre made by Pierre Janet with his subject Léonie.

The fact, if it is true, should with more propriety be called *thought transmission*, and it is clear that it cannot be explained in any way by the same principles as real suggestions.

II

Suggestion raises a large number of problems some of which concern the science of man under its double physiological and psychological aspect, others the moral aspect and others the medical.

1. The first especially concern the mechanism and intimate nature of suggestion.

In this respect the present theories may be divided into two groups, according to whether they seek the explanation of suggestion outside the subject, in the operator (*objective theories*), or outside the operator, in the subject (*subjective theories*).

The most ancient, in the first group, is the doctrine, discredited to-day, of *animal magnetism*, professed by Mesmer and his disciples, Puységur, Deleuze, etc. This attributed the effects of suggestion to a physical force, analogous to that of the magnet, which certain individuals radiate around them, which they can use at will, and by means of which, assuming the mastery of the brain and

nerves of other individuals sensitive to this influence, they compel them to obey their commands, or even, in certain cases, their thoughts. Hypnotism according to this hypothesis, would only be the more immediate and general result of magnetic force.

Although the greater number of contemporary scientists repudiate animal magnetism, many revert to it unwittingly by admitting the reality of the phenomena of *mental suggestion*. We can indeed scarcely see how one brain at a distance and without employing any visible sign, can influence another brain, unless there exists a radiation or force current proceeding from the first to the second.

Is it not also a disguised return to the same doctrine when the theory of contemporaries, like Binet, pretends to explain suggestion by *moral authority*? If moral authority is truly found in those who exercise it (and not only in the ideas and beliefs of those who submit to it), if it contains, as Binet sometimes seems to insinuate, a personal, mysterious, inexplicable element, it entirely resembles the force of the magnetisers, with only one difference, that it is psychological instead of being physical—and therein, in our opinion, is the inferiority of this hypothesis, because physics, by their definition, lend themselves infinitely better than psychology to verification and testing.

The subjective theories of suggestion also divide themselves into two opposing theories, the one physical or physiological (School of Paris), the other moral or psychological (School of Nancy).

According to the first, suggestion is explained by a special condition of the nervous system (hypnotism), which is connected with a nervous diathesis (hysteria). One of the principal characteristics of this diathesis, is the extreme instability of the nervous system, the elements of which, otherwise associated and subordinated to one another functionally in a constant manner, are yet

susceptible of being dissociated and made to act independently, one from the other, under the influence of causes, often entirely accidental. Thanks to this instability hypnotism produces a de-coördination of the cerebro-sensory functions, which, in turn, renders possible the immediate and irresistible action of each of the centres brought into play by such and such suggestion, the other centres, and especially the higher centres of judgment and will, exercising neither direction nor control.

According to the second theory, suggestion is a natural consequence of the psychological law by virtue of which every idea tends to affirm and realise itself, at least when it is not prevented by a contradictory idea of equal power. This law, which Spinoza seems to have been the first to enunciate, has been revived by Herbart, Dugald-Stewart, Taine, etc., and the contemporary French philosopher, Fouillée has made it the base of his system of *idées-forces*.

According to this doctrine, hypnotic suggestion, far from being an abnormal and morbid phenomenon, is, on the contrary, if one may say so, the return to the natural condition, a brilliant manifestation of one of the universal and primordial laws of psychological life; and what may appear astonishing is not that such a phenomenon is sometimes produced, but rather that it is not produced more frequently. But, to tell the truth, if we look at things a little closer, it is produced perpetually under divers appearances and names, and human existence is only a continual interchange of suggestions.

2. From the moral point of view the great problem raised by suggestion is that of the liberty and responsibility of subjects, which continues and loses itself in the problem perpetually discussed by philosophers—human responsibility and liberty.

Up to what point can we hypnotise a subject in spite of himself? Up to what point is he free to resist suggestions which are made to him?

The replies of various theorists to these questions are somewhat discordant, and the same author has sometimes been known to sustain in turn two opposite opinions.

Thus the School of Paris admits, on the one hand, that a subject may be hypnotised in spite of himself, since a purely physical action is sufficient for that, for example, a blow of the tom-tom, an electric light striking suddenly on the sight, etc.; and, on the other hand, it maintains that if a subject executes certain suggestions, apparently immoral or criminal (for example, to commit a theft or a murder), it is to please the experimenter and because he knows well that these are only "laboratory experiments."

On the contrary, certain disciples of the School of Nancy, for example Liégois, state that the subjects, when they carry out these suggestions, are incapable of all resistance and are transformed into real automatons, which yet does not prevent the head of that school from declaring that no one can be hypnotised (that is to say, according to his own theory, submitted to suggestion) against his will.

It does not appear to us quite certain that those who have thus maintained (not without inconsistency) the freedom of will of the hypnotised subjects, may not have yielded to the desire—hardly scientific—of "reassuring the public," as Bernheim says, "against the fear which an interpretation in favour of the irresistibility of suggestion might create."

As to the foundation of this question, we do not think that it can be brought to a single and absolute solution. Certain subjects may resist more or less effectually; others may not have the power; that, we believe, is the truth; and these degrees of the possibility of resistance depend upon conditions which seem to us to be almost entirely unknown and which we vaguely refer to by the obscure words of "temperament" and "force of will."

3. Finally, from the medical point of view, suggestion illustrates in a striking manner what the ancient psychologists called "the influence of the physical on the moral," and the problem is to know up to what point this influence may be extended and what use can be made of it in the healing of certain maladies.

We know that Mesmer and his successors thought that they had discovered a universal panacea in animal magnetism.

Braid, who helped to substitute hypnotism for magnetism, does not seem to have attributed any therapeutic property to this new agent; and the Paris School, who are historically attached to Braid, have only seen the experimental applications of hypnotism, although Charcot in the later years of his life, wrote an article on the "faith which heals."

The Nancy School, in particular, with Liébault and Bernheim, have brought forward the therapeutic rôle of suggestion, whether simple or complicated by hypnotism. It is not necessary to press Dr. Bernheim, in order to make him say that the majority of remedies and treatments only heal by means of suggestion, and it is certain that suggestive therapeutics must be taken into account in very varied and extraordinary recoveries.

The tendency of practitioners trained by the Paris School is, on the contrary, to restrict the rôle of suggestion to the treatment of nervous affections or even to *hysteria* only, and even to attribute to it merely a superficial and transitory action on the symptoms rather than on the illness itself.

There is for an impartial and disinterested critic perhaps no part of medicine where the prejudices of sects, the *idola theatri* of Bacon, have more influence than in this; and that is doubtless the reason why conclusions are reached with so much difficulty and so slowly.

As much could be said of the applications of suggestion

to mental orthopedics, if this particular form of application, inaugurated in our time by Dr. Bérillon, were not yet almost entirely undescribed.

In short, the study of suggestion offers to psychologists, moralists and physicians a vast field of research scarcely touched upon in the explorations of philosophers and savants of the second half of the nineteenth century.

CHAPTER VI

CRYPTOPSYCHY

IN a passage, seldom quoted, in his *Discourse on Method* (Part III) Descartes claims that: "the action of the thought by which a man believes a thing being different from that action by which he knows that he believes it, one often exists without the other." In other words, the belief, according to him, may often be unconscious; and we may, therefore, ask if other states of the mind are not susceptible of presenting the same characteristic.

However, it seems right to attribute to Leibnitz the first conception of unconscious psychological phenomena, or as he calls them, *imperceptible perceptions*. It was Leibnitz who first suspected "that there are always in us an infinitude of perceptions, but without apperception and reflection, that is to say, changes in the mind itself which we do not perceive, because the impressions are either too small, or too numerous, or too united, in such a way that there is nothing to distinguish them apart, but joined to others they yet produce their effect and are felt, even if vaguely, in the whole."

Since then this conception has become current in psychology, and if there has been discussion as to the interpretation of the expression "unconscious psychological phenomena," some maintaining absolute unconsciousness, and others relative unconsciousness or subconsciousness, there has at least been agreement on the necessity of admitting such phenomena, in order to obtain a satisfactory explanation of mental life.

It seems that the problem has taken a decisive step since it has been brought into the field of experiment by the study of certain facts more or less abnormal or pathological which have brought to light that swarm of interior phenomena previously hidden from our gaze.

We have been able to prove experimentally that parallel with and beneath the sensations, perceptions, ideas, judgments, arguments, etc., of which we are conscious, there exist, or there may exist, other sensations, perceptions, ideas, judgments, arguments, etc., of which we are not conscious; and even that these latter may be co-ordinated and organised amongst themselves in such a systematic manner as to constitute a second personality, more or less distinct and independent from the principal personality.

If we give the general name of "Cryptopsychy" to this kind of latency of psychological phenomena, we may at least for the convenience of our study and without prejudging the basis, distinguish two forms or two degrees in Cryptopsychy thus understood; first, an *elementary cryptopsychy*, fragmentary, consisting of isolated and scattered phenomena, and a *synthetical cryptopsychy*, organised, consisting of phenomena more or less closely connected and allied in such a way as to assume the appearance of a secondary personality.

I

In the first class of Cryptopsychy, the most frequent example is that of unconscious *sensations*.

We know that anesthesiae are very frequent in hysterical subjects; but are these anesthesiae real or apparent? In other words, when we touch, pinch, prick, burn, etc., any part of the body of an hysterical subject, who seems

to feel nothing, are we to understand that the various stimulations which we give him are not followed by any sensation, or rather, is it not permissible to suppose that they in fact cause sensations, but that these sensations are simply unconscious ?

In order to solve this problem it is necessary to have some means whereby these sensations which escape the subject's consciousness can be made manifest.

Before going further into the study of the various kinds of cryptopsychical phenomena, we will review the processes which enable unconscious sensations, and even in general, all unconscious psychological facts to be *developed* (in the sense similar to that in which photographers use this term).

One process is *subsequent somnambulism*. It consists in placing the apparently insensitive subject in a somnambulistic condition and questioning him as to what he felt at the time when he did not appear to feel anything. We then perceive by his replies that the sensations were duly produced, but were not accompanied by consciousness, at least, they were not perceived by the central and personal consciousness of the subject.

I employed this process for the first time in 1896 at La Salpêtrière, when in the employment of the late Doctor A. Voisin. One of my former pupils, B. L., to-day Doctor of Medicine in Paris, then house-surgeon at the same place, told me of one of his patients, S., an hysterical subject, suffering from cutaneous anesthesia over the whole surface of her body. S. had unconsciously made extensive burns on her body, which required treatment, and during this treatment the idea was suggested of investigating her powers of sensation. It was then perceived that she was completely insensible to pain. The doctors had in vain endeavoured to restore sensibility in her by suitable suggestions made when she was in a state of hypnosis : whether asleep or awake, S. remained entirely

in a state of anesthesia. I had just read the remarkable works of M. Pierre Janet on psychologic automatism, and I asked myself if this hysterical anesthesia did not really conceal, as some cases mentioned in that work¹ seemed to indicate, an unconscious sensitivity.

S. was placed in a somnambulistic condition, and was told that on awaking her body would be pricked in various parts which she must remember and exactly indicate when placed in a somnambulistic condition a second time. Once awakened S. did not appear to remember the suggestion. Whilst her attention was distracted by a conversation with one of the spectators, we made a number of prickings on various parts of her body where she was unable to see them. Again placed in somnambulism S. indicated with perfect accuracy the parts of her body where these prickings had been made and even the order in which they had been made. It would have been interesting to repeat this experiment without giving any previous warning or suggestion and varying the circumstances as far as possible. In a general manner it would be expedient to be certain if all cases of partial or total hysterical anesthesia are not really instances of subconscious perception.

A second process is that which M. Pierre Janet has described under the name of *suggestion by distraction* which he was the first to adopt. It may serve not only to reveal subconscious phenomena which may exist spontaneously in some subjects, but also to induce them experimentally. Advantage is taken of a moment of distraction on the part of the subject in order to make a certain suggestion to him, which is afterwards realised by him without his being aware of what he is doing, although he may be in a waking state at the time and his subsequent action would seem to imply a more or less complicated exercise of his mental faculties.

¹ *L'automatisme psychologique*, Part II, Chapter II. Paris: F. Alcan.

"Thus," says M. Pierre Janet, "with this ready distraction, peculiar to hysterical subjects, she will listen to other persons that speak but will not listen to me and will not even hear me, if I command her at that moment to do anything. This woman, unlike other subjects, does not seem particularly suggestionable when in a waking state. If I speak to her directly and ask her to do a certain thing, she is astonished, discusses it and does not obey. But when she speaks to other people, I can speak in a low voice behind her without her turning round. She does not hear me, but it is then that she unconsciously carries out the instructions. I tell her in quite a low tone to take out her watch and her hands obey meekly; I make her walk, put on her gloves, take them off, etc."¹

In certain subjects anesthesia leads to phenomena of the same nature :—

"I place in L.'s left hand (the left side being in a state of complete anesthesia) a pair of scissors and hide this hand behind a screen. L. when questioned knows absolutely nothing of what her left hand contains, and yet the fingers of her left hand are in the rings of the scissors handles, which open and shut alternately. In the same way I place an eye-glass in her left hand; she opens the eye-glass and raises it to place it on her nose, but mid-way it comes within her visual range, when she sees it and is astonished. 'Look there,' she says, 'I have an eye-glass in my left hand.' "²

A third process, connected with the preceding, which M. Pierre Janet has likewise systematically employed in nearly all his researches in cryptopsychy, is *automatic writing*. Spiritualists appear the first to have used this. It goes without saying that their purpose is entirely different, but we can completely isolate the experiment from all spiritualistic belief and practice. Taken by itself

¹ See Pierre Janet's *L'automatisme psychologique*, Part II, Chapter I, p. 238

² *Ibid.*, p. 253.

the phenomena of automatic writing simply consist in "a person, either conversing, or singing, and at the same time writing connected sentences and even whole pages without looking at the paper and without any knowledge of what has been written." "In my opinion," said Taine, to whom we are indebted for this description, "the sincerity of the person above alluded to is beyond question, because she declared at the end of the page she had no idea of what she had written on the paper. When she read it, she was astonished, sometimes alarmed."¹

In order to obtain this phenomenon experimentally, we may have recourse either to experiment by distraction, of which we have just spoken, or to suggestion in a condition of somnambulism previously induced.

The following is an example of the first :—

"I took L.'s left hand, which was in a state of anesthesia ; she was unaware of it and was conversing with other persons. I placed a pencil in the right hand, and the hand clasped it, but instead of directing her hand and making her trace a letter which she would repeat indefinitely, I put a question : 'What age are you ? In what town are we now ?' and then the hand moved and wrote the answers on the paper without L.'s ceasing to speak on some other matter."²

The following is an example of the second, according to the same author :—

" Suggestions are made during well-attested hypnotic sleep ; then the subject is completely awakened, and the suggestions are carried out in a waking state. When I have pressed her hand I say to her (the subject L.) 'Take a pencil and paper on to the table and write the word—Bonjour.' At a given sign the word is rapidly written in legible writing. L. does not know what has

¹ See Taine, *De l'intelligence* : Preface.

² Pierre Janet, *L'automatisme psychologique*, p. 266.

been done, but it was only pure automatism which does not manifest great intelligence. 'Multiply in writing 739 by 12.' The hand wrote the figures very distinctly, did the sum and did not stop until it was completed. During the time L., who was quite awake, told me how she had spent her morning, and did not stop speaking while her right hand made the necessary calculation.'¹

But it is not necessary to put a question to the subject during somnambulism and then awaken him in order that the answer may be written without his knowledge. It is sufficient, according to the same author, to suggest to him once only during sleep that he should reply to the questions asked him by the operator, in order that, when awakened, he may always do it and in the same automatic manner. Automatic writing is thus found combined with suggestion by distraction, as we may see from the following description :—

"At that moment, L. although awake, but having been made the subject of suggestion in a previous sleep, seemed no longer to see or hear me consciously : she did not look at me, and spoke to every one else but me ; if I asked her a question (suggestion by distraction) she replied to me in writing and without interrupting her conversation with others."

We may, moreover, replace writing by other signs. Thus M. Pierre Janet suggested to his subject L. to reply to his questions by pressing his hand to signify "yes" and by shaking it to indicate "no." He took her left hand which was in a condition of anesthesia ; she did not perceive this and went on conversing with other people. Then he also talked with her, but she did not appear to hear him : only her hand heard, and she replied by some slight but very distinct movements well adapted to the question.²

¹ *Ibid.*, pp. 262-263.

² *Ibid.*, p. 243.

In the same way M. Flournoy communicated with one of the subconscious personalities of Mlle. Hélène Smith (which called itself Leopold) by the intermediary of a finger which spelt the letters, whilst another of these personalities (which gave the name of Marie-Antoinette) made use of the vocal organ of the medium. Naturally the pen or pencil can be replaced by any other means of communication (table, planchette, etc.).

Finally, the fourth process of revelation of subconscious facts is *vision in the crystal*, or, as it is called in England, *crystal gazing*. A person is seated before a glass ball, placed, whenever possible, on a black base and looks at it attentively. At the end of a certain time pictures appear which often succeed each other in a rapid manner. We may study this phenomenon from various points of view and, for example, in its connection with lucidity or clairvoyance, as the ancient magnetisers did, but we can also employ it as a means of awakening certain subconscious psychological states, principally recollections, dreams, etc. The following illustration is taken from M. Pierre Janet, to whom it is always necessary to refer when cryptopsychy is in question :—

“ A sick person, a somnambulist, rises during the night from his bed, does all sorts of foolish things, and in particular, writes a threatening letter to a person, etc. The letter is taken from him and the document given to me without the knowledge of the invalid. Moreover, when awake he remembers nothing of it. It was not until some days later that I had the opportunity of repeating with him the experiment of the glass ball. As he asked to see some written letters I said to him : ‘ Take a pen and some paper and copy what you see in the mirror.’ He copied it word for word, only passing over some words he could not read. He seemed to be copying sentences without understanding them in any way, which, moreover, he said was the case ; but the result was that he

wrote exactly, whilst appearing to copy it, the letter which he had already written during the fit of nocturnal somnambulism and which I had already in my possession.”¹

Vision in the mirror may also be employed to reveal subconscious sensations :—

“ We take the forefinger of the sick person (in a state of anesthesia) and ask him what is being done to him. He replies that he knows nothing. But if we place him before a crystal ball, he sees that his forefinger is being pinched and he then knows what is being done. If you draw his attention away and move his fingers, he does not feel anything; but in the ball he will see the position in which you have placed his fingers.”²

These are the principal means of experimental psychology for revealing all those strange phenomena not affecting the consciousness, although evidently they may be of the same nature as those which are unfolded in its depths.

We have just seen how they enable us to prove the existence of unconscious or subconscious sensations; but many other more complex facts belonging to higher orders may be manifested in the same way.

And first of all *perceptions*, that is to say, combinations of sensations, remembrances and decisions closely associated between themselves and consolidated in an apparently indivisible action, connected with a determined external object. We have an example in the case of Leonie, who doubtless perceived the scissors and the spectacles placed in her hand, already in a state of anesthesia, since she used them rightly and yet she had no conscious knowledge of their presence.

Then we come to *judgments*, doubtless provoked by sensations, but yet distinct from perceptions, in that they bear

¹ Pierre Janet, *Névroses et idées fixes*, Vol. I, p. 417.

² *Ibid.*, p. 418.

less on objects than on the relations of resemblance, difference, number, etc. I borrow the following illustrations from M. Pierre Janet: “‘When I say two letters alike, one after the other, you will keep quite still.’ After she awoke I repeated the letters ‘a, c, d, e, a, a.’ L. remained motionless and entirely contracted; there was an unconscious judgment of resemblance. The following are judgments of difference: ‘You will go to sleep when I mention an uneven number, or you will turn your hands one over the other when I mention the name of a woman.’ The result is the same; when I mention even numbers or the names of men, nothing happens; the suggestion is carried into effect when I give the sign agreed upon. L. has therefore unconsciously listened, compared and appreciated the differences.”¹

More or less lengthy processes of judgments, as for instance arguments, can be produced outside the consciousness. “‘When the total of the numbers which I shall repeat amounts to ten, you will send kisses with your hands.’ She is awakened, and at some distance from her, while she is talking with other people who distract her attention as much as possible, I repeat in a low tone 2, 3, 1, 4, and the movement is made. Then I try more complicated numbers and other operations. ‘When the numbers which I shall pronounce 2 by 2, subtracted one from the other give a remainder of 6 you will make such and such a gesture.’² All this is done with scarcely a mistake. During all this time L. was quite awake, told me how she had employed her day and did not once cease speaking while her right hand made the calculation correctly.”³

Finally, acts of mental combination, *imagination*, can

¹ *L'Automatisme psychologique*, Part II, Chapter I, p. 262.

² *Ibid.*, p. 262.

³ *Ibid.*, p. 263.

be produced outside of all personal consciousness. M. Janet suggested to his subject L. in a state of somnambulism that at a given signal, when awakened, she would write a certain letter. This is what she wrote without knowing it, when she was awakened :—

“ MADAM :

“ I cannot go to you on Sunday as was intended : I ask you to excuse me. It would give me much pleasure to be with you, but I am unable to accept for that day.

“ Your friend,

“ LUCIE.

“ Please give my best regards to the children.”

“ This automatic letter,” remarks the author, “ is correct and indicates a certain reflection. Lucie spoke of other things and replied to several persons while she was writing. Moreover, she understood nothing of this letter which I showed to her, and asserted that I had copied her signature.”

In spiritistic séances, we also see mediums obtain, either by means of the table, or by automatic writing or in some other way, very complicated communications which sometimes present the character of philosophical or scientific dissertations, sometimes of romances, poems, works of art, which therefore, imply innumerable operations of reasoning and imagination, which are, however, entirely foreign to the mediums' knowledge ; and for that reason they are inevitably led to attribute them to intelligences distinct from themselves, to which they give the name of *spirits*. We find some very good examples in Flournoy's work *Des Indes à la planète Mars*, especially that of the unconscious creation of a language, the Martian language with vocabulary, grammar, writing, etc.

It is hardly necessary to say that memory, which is normally unconscious with everybody in one of its functions (the conservation of recollections), also furnishes an ample harvest of cryptopsychic facts. The process of the glass ball may also serve to manifest them experimentally. One young woman relates that on looking at a mirror, she was always haunted by the same picture, a house with large, dark, dismal walls, on which grew an extraordinary clump of white jasmine. She had never, she thought, seen a similar house in the town where she had lived for a long time. But, after a searching inquiry by the London Society for Psychical Research, it was proved that there was a house in London which had this appearance and which this person had seen. When passing it she had been thinking of something else, but she had seen it. Another person, when placed in front of the crystal ball saw a number suddenly appear. "I have never seen this number," she said. "Why is it that I see this number 3244 more than any other?" But it was proved that during the day she had changed a bank-note which bore this number. A third person, something of a mystic, saw an article from a newspaper appear in the glass. She thought it odd but sought to read it: it was the announcement of the death of one of her friends. She related the fact: those present were astonished. There was found in the house a copy of the newspaper placed before the fireplace as a screen, and on the visible side, spread out plainly enough, was the article in question with the same characters and form as seen in the crystal.¹ It was a similar case to that which we have already reported concerning the somnambulist who copied from the mirror the letter written by him in a previous somnambulistic condition and of which he had no conscious recollection.

¹ Pierre Janet, *Névroses et idées fixes*, Vol. I, pp. 417-418.

Thus all intellectual phenomena are susceptible of assuming the cryptopsychic form. It is the same with phenomena of muscular activity, of *actions* properly so-called. The method of "suggestion by distraction" enables us to take account of this. Thus we command a subject to put his fingers to his nose and his hands are placed at the end of his nose. Questioned as to why he did this he replies that he did nothing and enters into a long conversation without suspecting that his hands are moving about at the end of his nose. We make him walk across the room and he continues to talk, thinking that he is sitting down all the time.¹

Can we in the same way provoke or observe acts of the *will*, properly so called, subconscious resolutions or decisions? The case would be interesting to study; we do not know if it has yet been done.

Finally, *emotions* may equally pass from the consciousness into the subconsciousness, but as all emotion is generally attached to an idea, it is somewhat difficult to know if the latent persistence of the emotion does not imply a consequence of the latent persistence of the idea which accompanies it. It would be necessary, in order to dissociate the two phenomena, to make some experiments, which, we believe, have not yet been made. The works of Lange and William James might find in this an interesting verification. In the present condition of our researches, the question of subconscious emotions is only another side of subconscious *fixed ideas*. According to Dr. Pierre Janet² these fixed ideas, exactly like those provoked by suggestive hypnotism, have their origin in an emotion, in some incident which suddenly strikes the mind of the sick person. Emotion, in fact,

¹ Pierre Janet, *L'automatisme psychologique*, Part II, Chap. I, p. 239.

² *Névroses et idées fixes*, Vol. I, p. 156.

is a powerful factor in causing distraction, anesthesia, amnesia—in a word, unconsciousness. It seems, says the author from whom we are quoting, in certain cases to have a rôle inverse to that which has been attributed to will and attention.¹ “What characterises these two functions, is a synthetical activity, a construction of most complex systems built up with the elements of the mind, sensations and pictures; these systems form resolutions, perceptions, and judgments, memory and personal consciousness. Emotion, on the contrary, seems to give power of dissociation and analysis. Except in extreme cases, it does not really destroy the elements of thought; it allows them to exist, but disaggregated, isolated one from the other, sometimes to such a degree that their functions are almost suspended; and it is in that state of disaggregation and isolation, may we say, that they become in some way external to the personal consciousness of the subject. The result is, that in nearly all observations of *fixed ideas*, we find, on carefully searching for the origin, some violent emotion that on the one hand has helped to fix the idea by subtraction from the consciousness and that on the other hand keeps up a disturbance more or less deep in all the intellectual, or even vital functions, which tends to reappear perpetually on the least opportunity, most frequently, without the idea reappearing at the same time.” Thus a sick person, Jus., amongst other symptoms of hysteria, suffered from violent attacks, which apparently came without cause; in addition, she had a singular horror of the colour red. But, in a somnambulistic condition, this sick person explained quite clearly that the attack originated in the recurrence of an emotion which dated back several years; she then saw the body of her father at the moment when they sealed up the coffin, and at each attack, she again saw this heartbreaking spectacle;

¹ *Névroses et idées fixes*, Vol. I, p. 475.

she also explained her horror of red by her recollection of the flowers which were on the coffin.¹

II

All the facts we have reviewed belong to what we have called *elementary or fragmentary cryptopsychy*, that is to say, they form a series of islets more or less extended and subjacent to the continuous series of conscious phenomena which compose the apparent and usual personality; but it may also happen, under the influence of circumstances, still imperfectly defined, that some facts of this class, instead of remaining intermittent and scattered are united together and form veritable continents, in a such a way as to present the appearance of secondary personalities, more or less permanent, co-existent with the principal personality. They then belong to what we have called *synthetical or organised cryptopsychy*.

First of all it is possible to induce this transformation experimentally. This has been done most successfully by automatic writing. Let us quote from Dr. Pierre Janet.²

“Having ascertained, not indeed without astonishment, the secondary intelligence manifested by Lucie’s automatic writing, one day I had the following conversation with her whilst her normal self conversed with another person.

‘Can you hear me?’ I said to her.

She replied by writing—‘No.’

‘But in order to reply, you must hear.’

¹ Dr. Pierre Janet, *Névroses et idées fixes*. See also p. 341 for the cases of emotional contracture observed in various hysterical subjects. “Contracture persists because the emotion persists, always bringing with it the same psychological and physiological results; it is in a sense a congealed emotion.”

² *L’automatisme psychologique*, Part II, Chap. II, p. 31.

- ‘Yes, certainly.’
- ‘Then how did you do it?’
- ‘I do not know.’
- ‘There must have been some one who heard me?’
- ‘Yes.’
- ‘Who was it?’
- ‘Not Lucie.’
- ‘Ah! Some one else. Will you give us your name?’
- ‘No.’
- ‘Do, it will be more convenient.’
- ‘Oh, well, Adrienne.’
- ‘Then, Adrienne, do you hear me?’
- ‘Yes.’

When named, the unconscious personality is, according to M. Pierre Janet, more fully defined and clearer, and displays its psychological characteristics more readily. We perceive that it is a special knowledge of those sensations disregarded by the primary or principal personality; it is this personality which says that we pinch the arm or touch the little finger whilst the subject has for a long time lost all tactile sensation, etc. One of the first characteristics which this “secondary self” manifests is a marked preference for certain persons, especially for the experimenter. Adrienne, who perfectly obeyed Dr. Janet and voluntarily conversed with him, did not take the trouble to reply to every one. When cryptopsychic phenomena are isolated, they may be provoked by the first comer; but if they are grouped into a personality, they manifest preferences and not only do not obey, but resent a stranger.

This personality has ordinarily little will, it obeys the slightest orders, although it may sometimes show itself to be very intractable and may seem to acquire, on growing up, a certain capacity of resistance and spontaneity. Dr. Pierre Janet reports concerning this matter¹ the very

¹ *Loco citato*, p. 320.

singular instance of a letter spontaneously written by the second personality (Leontine) to inform him of the condition of health of the first personality (Leonie) and of the precaution taken by the first to prevent the second personality from tearing up the documents written when in a somnambulistic condition.

It is even possible to provoke in the same subject, the formation of several latent personalities, in some manner superposed; and thus Dr. Pierre Janet made a third person, Leonore, appear with Leonie, behind Leontine, quite different from the other two.¹

Organised cryptopsychy is not exclusively of experimental origin. We find some spontaneous examples, sometimes shown in certain diseases and sometimes in spiritistic séances.

An extremely interesting case of the first kind is reported in *Névroses et idées fixes*. It relates to a sick person who entered La Salpêtrière in 1891, who presented all the symptoms of diabolic possession, as it has been described in the epidemics of the Middle Ages. This person, whose story should be read in the book itself, was clearly dissociated into two personalities: the one the sick person himself, the other the devil that spoke through him in abusive language and blasphemies. Dr. Janet tried in vain to exercise some authority over him, but he could not succeed in any way by suggestion or hypnotism. However, taking advantage of the distraction of the sick person, he made him take a pencil in his right hand and write some lines and letters automatically. Placing himself behind him whilst he raved and ranted, he, in a low voice, commanded him to make some movements which were not carried out; but the hand which held the pencil wrote, "I will not." "And why will you not?" "Because I am stronger than you." "Who are you?"

¹ *Revue philosophique*, "Unconscious Actions and Memory during Somnambulism," Vol. XXV, p. 273.

"I am the devil." "Ah, well, we can converse." In fact, from the time of being placed in relationship with the subconscious personality by writing, the experimenter was able to make him execute a large number of acts against his will and unknown to the patient. Finally, he asked the demon, as the last proof of his power, to send the so-called possessed person to sleep in an armchair and to make him sleep perfectly without any resistance. He thus obtained the somnambulism which he had ineffectually tried to produce by direct hypnotism, and profited by it to bring about his cure, by relating to the sick person the events which had set up the illness (remorse for a serious fault committed on a voyage).

We shall find numerous examples of the second category in all the published accounts of spiritistic séances. Without doubt the convinced partisans of spiritism claim that the secondary personalities that manifest themselves in mediums are really independent beings, entirely distinct from the mediums themselves; and some observations made in America with the celebrated medium Mrs. Piper, give an air of reality to their assertions.¹ But it will be admitted that it is anti-scientific to have recourse to the spiritistic hypothesis, when any other simpler hypothesis more conformable to the whole of our knowledge, enables us to explain the facts observed. And such is indeed the case with a large number of mediumistic communications.

III

Now that we have glanced at the various forms of cryptopsychy, it remains for us to ask on the one hand what are the phenomena of which cryptopsychy can give us the explanation, and, on the other hand, how it is possible to explain cryptopsychy itself.

¹ See *Human Personality*, by F. W. H. Myers, Vol. II, Chap. IX, paragraph 954, p. 247.

In a normal man we observe an elementary cryptopsychy in the phenomena of *distraction, instinct, habit* and *passion*.

A pre-occupied man will drive a fly away from his forehead without feeling it, reply to questions which he has not heard, or, like Biren, Duke of Courlande, who had the habit of putting pieces of parchment into his mouth, destroy an important commercial contract without seeing it. Who has not heard¹ of the exploits of those persons who, when they are conversing at table, continue indefinitely pouring out water, inundating the guests, or place sugar in their tea until the cup will hold no more?

“Really voluntary acts,” says Janet,² “are uncommon, and many of our actions are partly, if not entirely, automatic,” and he makes mention of the involuntary movements so frequently described, itchings, rhythmic movements with music, and also those subconscious movements, more or less in harmony with our thoughts and by which these are revealed in spite of ourselves in our experiments with the registering pendulum and *Willing game*.

Condillac had already drawn attention to the kind of duplication of the personality produced by habit. “There are,” he says, “in some way, two persons in each individual, the self of habit and the self of reflection; it is the first that touches, sees and directs all the animal faculties, his object is to steer the body, to preserve it from accident, to watch continually for its preservation. The second abandons to the first all these details, and turns to other objects. But, although each has one particular end in view, they often act together. When a geometrician, for example, is engrossed in the solution of a problem, the objects continue to act on his senses. The usual self therefore obeys their impressions, it is that self that

¹ Ad. Garnier, *Facultés de l'âme*, Vol. I, p. 325.

² Pierre Janet, *L'automatisme psychologique*, Part II, Chap. IV, p. 462.

crosses Paris, avoids obstructions, whilst the reflective self is wholly concerned with the solution which he seeks.¹

Xavier de Maistre has also made in his *Voyage autour de ma chambre* a clever picture of the personality in distraction, habit and passion. "I perceived," he says, "by various observations, that man is composed of a soul and of an animal. These two entities are absolutely distinct but so fitted one within the other, or one over the other, that the soul must have a certain superiority over the animal nature to be in a condition for the distinction to be made. One day last summer I set out to go to the court. I had painted all the morning, and my soul, happy in meditating on the picture, left to my animal part the duty of conducting me to the king's palace. Painting is a glorious art! my soul thought. Happy is he whom the sight of nature has touched! Whilst my soul made these reflections, the other went its way, and God knows where it went! Instead of taking me to the court, as it had received instructions to do, it drifted so far to the left that when my soul overtook it, it was at Mme. de Haut-Castel's door, half-a-mile from the royal palace."

Cryptopsychy assumes such importance with hysterical subjects that we may ask if it is not even the cause of hysteria, or, in any case, if it is not the chief symptom, that by which we can explain the majority of the others. "The hysterical malady," says Dr. Pierre Janet, "is by far the most favourable ground for the development of automatic phenomena."² But automatic phenomena always imply, as we have seen, subconscious psychological conditions. However, this author admits that "hysteria itself is only a particular complex case of a more general and simple condition, an unhealthy condition, but which

¹ Condillac, *Traité des Animaux*.

² *L'automatisme psychologique*, Part II, Chap. IV, p. 445.

is not uniquely hysterical.”¹ This condition, according to him, may, on the contrary, be much greater than hysteria, it may include hysterical symptoms among its manifestations, but it will also reveal itself by fixed ideas, by impulses, by anesthesiae due to distraction, by automatic writing and finally by somnambulism itself. What constitutes this unhealthy condition? Since all such varied phenomena of automatism have for essential conditions a state of anesthesia or distraction, we must admit, with our author, that this unhealthy condition, substratum of hysteria and of a large number of other neuroses “is connected with the narrowing down of the consciousness, and this narrowing down itself is due to the weakness of the synthesis and the disaggregation of the mental composite into various groups smaller than they should be normally.” In a word this condition “is a particular moral weakness consisting in a moral incapacity that the weak subject has in collecting and condensing his psychological phenomena and assimilating them,” and in the same way in which a weakness of assimilation of the same character has received the name of *physiological poverty* we may call this moral evil *psychological poverty*. In any case, whatever may be the deep nature and physical substratum of this state of mental poverty, its constant sign, its essential manifestation is, without contradiction, cryptopsychy, that is to say, the tendency of certain psychological phenomena to isolate themselves from the central consciousness in order to constitute beside and beyond it some centres of secondary consciousness more or less extended and persistent. Thus the greater part of hysterical symptoms evidently come from cryptopsychy, as it is easy to notice when going over the list of these symptoms, fixed ideas, anesthesiae, amnesiae, paralyses, contractures, etc.

It does not play a less important part in *hypnotism* as

¹ *L'automatisme psychologique*, Part II., Chap. IV, p. 451.

the original and penetrating genius of Durand (de Gros) apprehended. We may even ask with Pierre Janet if it is not worthy, at least, as much as suggestion, of being regarded as "the key to all hypnotic phenomena," even if it does not contain the explanation of suggestion itself.

First of all, it alone permits, it seems, of accounting for certain suggestions which, at first sight, appear to be altogether incomprehensible, to wit, *post-hypnotic suggestions at a longer or shorter distance of time*. If I suggest to a hypnotised subject, that, when awakened, he will embrace a certain person as soon as he sees her, we understand that he preserves in his mind a latent association between the thought of that person and the thought of the act suggested; we ourselves unconsciously preserve a number of analogous associations; for example, the sight of some person may awaken later in us some sad or joyful idea of which we are not actually thinking. But is the case the same, when I suggest to a subject that he will come back to see me at the end of thirteen days? How are we to understand, says M. Pierre Janet, this awakening on a fixed day without any point of connection other than the numeration of time? ¹

Cryptopsychy clears up this mystery. Just as we have seen that the awakened somnambulist can accomplish without consciousness more or less complicated intellectual acts of judgment and reasoning, so he can count the days and hours which separate him from the accomplishment of a suggestion, although he may have no recollection of this suggestion or any consciousness of the calculation.

It is again cryptopsychy which gives us the clue to certain paradoxical suggestions known as *negative hallucinatory suggestions*, or, as M. Pierre Janet propounded, *suggestions of systematised anesthesia*. They consist in the fact that the subject when awakened ceases to see the

¹ *Revue Littéraire*, July 26, August 2, 9 and 16, 1886.

persons or the objects whose disappearance has been suggested. In this case do they relate to a paralysis of the sensory centres which make them in point of fact insensible to such person or object ? Or are they rather connected more with a kind of prejudice of the brain which in some way annuls a perception, however real, in such a way as to render it unconscious or, rather, subconscious ? The following is an experiment of Binet and Féré¹ which decides the question. " Among ten similar pieces of pasteboard, we point out one to the sick person and that one only is to be invisible. On his awakening we show him the ten cards in succession ; the one to which we have during his somnambulism drawn his attention will remain invisible. If the patient makes a mistake sometimes it is because he has missed the guiding mark and that the cards are too similar ; in the same way if we only show him a small corner of the cards, he will see them all." Therefore, MM. Binet and Féré rightly conclude, " the subject must recognise this object in order not to see it." M. Pierre Janet undertook the experiment under more precise conditions. " He placed five cards on the somnambulist's knees, two of which were marked with a cross. When she was awakened ten minutes later, she was astonished to see cards on her knees ; we asked her to count them and give them back one by one. She took three papers one after the other, those which were not marked with a cross and gave them back. We insisted on asking for the others, she asserted that she could not give them back, since there were not any more. We took all the papers and spread them out on her knees, upside down, in such a way as to hide the crosses, she counted five and put them all back. We replaced them leaving the crosses visible ; she only took the three not marked and left the others." ² The experiment was even made

¹ *Magnetisme animal*, p. 236.

² Pierre Janet, *L'automatisme psychologique*, Part II, Chap. II, p. 277.

more complicated by substituting for the five cards twenty small numbered papers and suggesting to the subject that she would only be able to see, on awakening, the papers which bore numbers which were multiples of three. The results were identical.

But cryptopsychy not only permits the explanations of certain kinds of suggestions; it causes us to enter more deeply into the understanding of *suggestion* generally.

According to the School of Nancy, suggestion is only a normal result of the credulity and docility natural to the whole of the human race. A rather large number of cases seem to lend themselves to this interpretation; they are all those where the subject of the suggestion is told beforehand of the power of the suggestioner and predisposed to submit. But how can this be the case when, on the contrary, the subject opposes to the suggestion the most strenuous incredulity without however succeeding in preventing himself from feeling or doing what the suggestioner has commanded? Must we not then suppose in him a kind of dissociation of the personality, as though the person that obeys the hypnotiser is different from the other? Durand (de Gros) has very excellently elucidated this by his analysis of the very curious case of "Laverdant" already quoted in his *Cours de Braidisme*.¹

"The subject," he said, "assisted for the first time at an hypnotic experiment by placing himself at the disposition of the experimenter 'to fill up a gap,' and nothing further. He was not actually influenced by any suggested thought, he did not in any way expect to become the subject of suggestion, he did not even know exactly what constituted the experiments in which he was to take part, and his only thought was to profit by the opportunity by making 'a small sum.' He followed the

¹ Under the pseudonym of Dr. Philips, *Cours théorique et pratique du Braidisme*. Paris, 1869.

instructions given to look attentively at the object which was placed in his hands, and that was sufficient, for, at the end of a few moments, he felt himself passing into the hypnotic state. The hypnotised subject who had been fully awake all the time *did not believe* in the possibility of realising the statements of his hypnotiser, almost indignantly resenting what he called the impertinence of the hypnotiser when he told him he would place him in such a condition that he would not know one of the letters of his name. And when this fact was accomplished he showed himself no less stupefied and amazed than any of those who were present. On the one hand, his own will, the will of which he had consciousness, remained unimpaired, since he wished to resist the mysterious experiment, and had willed very energetically to do so up to the last. That which performed the act of faith and obedience in the subject was therefore not himself, properly speaking, but some self other than himself.”¹

But if cryptopsychy plays so important a part in suggestions of this character, it is infinitely probable that it is equally present in the case of suggestions where the subject does not offer any incredulity or apparent resistance to the statements and commands of the hypnotiser; in the one case as in the other, the personality influenced is doubtless a secondary personality, more or less completely foreign to the normal personality.

This seems to be proved by the marked preference which the subjects generally manifest for their hypnotiser; it is he alone whom they believe, he alone whom they obey, often indeed they believe and hear him only. How can we understand this preference, unless we suppose that the thought of the hypnotiser always remains present in the subconsciousness of the subject and that it exercises on all his other psychological states a peculiarly powerful action?

In his very interesting chapter on *somnambulistic*

¹ Durand (de Gros), *Le merveilleux scientifique*, 1894. Paris: F. Alcan.

influence Dr. Pierre Janet concludes from a large number of observations, very finely analysed, that "a certain thought relative to the person who has brought about the somnambulism, a thought which has given birth to special sentiments and which has some special characteristics, not only accompanies the period of influence but disappears with it. This period is all the more marked when this thought is more powerful. It therefore seems that this idea of the hypnotiser plays a considerable part, that it directs the conduct of the subject, exercises an inhibitory action on his fixed ideas, excites his activity and by that also indirectly determines the amelioration of his health, the development of the sensibility, intelligence and will which seem to characterise this period." It is not, therefore, only suggestion which determines all the phenomena of somnambulistic influence as the School of Nancy claims; it is, on the contrary, in many cases, this influence and domination of the hypnotiser which determines the suggestion itself, and we have just seen that this influence in itself is only a special form of cryptopsychy.

May we go further and connect suggestion itself, understood in the most general sense, with cryptopsychy? Such appears to be the doctrine of M. Pierre Janet, or, at least, suggestion and cryptopsychy appear to him to be both consequences of one and the same fundamental state of this condition of psychological poverty characterised by a constant tendency to mental disaggregation, where subconscious phenomena are produced and organised outside the central consciousness with the greatest facility.

Perhaps it will be sufficient, in order to clear up the question, to distinguish more clearly than we have done up to now, between suggestion in a state of hypnosis and suggestion in a waking state.

The first accompanies hypnotism, and, whatever the School of Nancy may say, is certainly conditioned by it.

But hypnotism has the effect of substituting for the normal personality, which is more or less capable of judging and acting by itself, a second personality, the most prominent characteristic of which is an extraordinary suggestibility. This, whilst establishing the fact that this second personality forms as it were a new consciousness foreign to the usual consciousness of the hypnotised subject, explains how it comes about that, on awakening, the first does not remember anything at all of what has happened to the second.¹ Hypnosis, from this point of view, is in some way a phenomenon of *complete and consecutive* cryptopsychy: there may succeed in the same individual two systems of psychological states so that the second is totally foreign to the first, and unconscious of it. But this second system is quite ready to decompose itself into as many distinct systems as we may wish, and it is in that that its characteristic suggestibility consists; because suggestibility is nothing else than the tendency of any one psychological condition to unroll automatically the whole series of its associations without being hindered or controlled in its development by the other conditions, that is to say, by the intelligence and will of the person.

Suggestion in a waking state is particularly possible, as experiment has shown, among subjects who have just been hypnotised or who are susceptible of being so treated. In the first case, it supposes the reappearance of the second or hypnotic personality by the side of the principal or usual personality.

¹ Cf. Pierre Janet, *L'automatisme psychologique*, Part II, Chap. II, p. 324. In studying, with certain subjects, this second personality which is revealed to us behind the normal consciousness, one cannot prevent oneself from feeling a certain surprise. We do not know how to explain the rapid and sometimes sudden development of this second consciousness. Our astonishment will cease if we carefully notice that this form of consciousness and personality is not now called into existence for the first time. We have already seen it somewhere, and we have no trouble in recognising a former acquaintance; it is simply the personage of somnambulism who is manifested in this new manner during the waking state.

In the second case, which is however, less frequent, under an influence yet imperfectly defined, but which is certainly of the same nature as that which produces hypnosis, the subject spontaneously enters a more or less perfect hypnotic condition. One part of his personality is separated from the remainder, and it is this part which receives and carries out the suggestions, often in spite of the resistance or incredulity of the other part. Consequently, in the two cases, the suggestion in the state of waking, real or apparent, appears to us as a *partial* and *simultaneous* cryptopsychy; partial in the sense that only a part of the psychological states of the individual is isolated from the whole, in order to constitute a lateral centre; simultaneous in the sense that this centre co-exists with the principal or usual personality.

Can an integral explanation of *spiritism* be found in cryptopsychy? The question, in our opinion, is not yet capable of receiving a definite answer; but in any case, it is certain that cryptopsychy constantly intervenes in the majority of phenomena known as mediumistic—automatic writing, messages transmitted through the planchette or the table, the phenomena of incarnation, etc., etc. Evidently, if the second personality thus manifested was really, in certain cases, distinct from the medium himself, we should then find ourselves in the presence of a new fact, which we could no longer explain by the mere laws of ordinary psychology; but, in the great majority of cases, this hypothesis of the intervention of a strange personality, is quite unnecessary and gratuitous, and consequently, until there is more ample information, the first explanation of cryptopsychy is laid down, as we have expounded it.

We may say as much of the cases of possession which were so frequent in the Middle Ages. The cryptopsychical explanation must be accepted for them in the absence of fuller information. On this point nothing is more

instructive than the observation of Dr. Pierre Janet of which we have already spoken. His patient, Achille, presented all the classical signs of possession, projection of the personality,¹ hallucinations,² insensibility,³ etc. However, thanks to automatic writing, it became possible to verify the crytopsychical origin of his delirium, and we know how this actual delirium was cured by an ingenious employment of hypnotism and suggestion.

Let us, therefore, summarise this enumeration by saying that crytopsychy is a very general means of elucidation which experimental psychology ought never to lose sight of in the study of the more or less abnormal or paradoxical phenomena of human nature.

IV

Now, how can we explain crytopsychy itself ?

It would be rash to put forward anything else than hypothesis in a category of facts so little known and so full of mystery.

¹ He murmured blasphemies in a hollow, solemn voice. "Cursed be God, the Trinity and the Virgin," he said, then in a shrill tone and with weeping eyes: "It is not my fault if my mouth utters shocking things; it is not I . . . I close my lips so that the words shall not come, so as not to say them aloud: that does not prevent them."¹¹ *Névroses et idées fixes*, Vol. I, p. 381.

² "Achille heard other devils speaking and laughing at some distance from his body, and saw a devil in front of him."¹² *Ibid.*, p. 385.

³ "When he twisted his arms in convulsive movements, we could prick and pinch them without his knowledge. Very often Achille struck himself, lacerating his face with his nails, without feeling any pain. As a last resource, I tried if it would not be possible to put him to sleep in order to further influence him during the hypnotic condition: it was useless; by no process could I succeed, either by suggestion or hypnosis; he replied to me with abuse and blasphemy, and the devil speaking through him laughed at my impotence. It was the same at other times: when the doctor told the demon to keep silent, the demon rudely replied: 'You command me to keep silent, and I will not.'¹³ *Ibid.*, p. 386.

The most ancient hypothesis, the first in point of date is, it seems, that of Durand (de Gros), the hypothesis of polyzoism and human polypsychism. "There is not one psychological individuality, not one self in man," said Durand (de Gros), "there is a legion, and some *facts of consciousness*, proved to be such, which nevertheless remain unknown to *our* consciousness, take place in other consciousnesses associated with these in the human organism in an anatomical hierarchy represented by the series of nervous centres of the ganglionic system."¹

We should do well to remind ourselves of the simple hypothesis of cerebral duality and the functional independence of the two cerebral hemispheres, to which some have had recourse in order to explain the development of the two parallel consciousnesses in the phenomena of somnambulism and spiritism.²

Is there an attempted explanation or simply a convenient method of expressing or representing the facts in the hypothesis proposed by Dr. Grasset of the *polygon* and of the centre O?

"There are," says Dr. Grasset, "two psychisms, two categories of psychical acts; superior actions, voluntary and free, and inferior, automatic acts: superior and inferior psychism. To each of these categories of actions the different groupings of the centres or neurones necessarily correspond. There are therefore: (1) centres of simple reflexes; (2) centres of superior reflexes, inferior, non-psychical automatism; (3) centres of superior psychical automatism and inferior psychical automatism; (4) centres of superior, free and conscious psychism.³ In O the superior psychical centre is formed, be it understood,

¹ *Le merveilleux scientifique*, p. 181.

² Berillon, *La dualité cérébrale et l'indépendance fonctionnelle des hémisphères cérébraux*, 1884, p. 115. Magnin, *Étude clinique expérimentale sur l'hypnotisme*, 1884, p. 157. Myers, "Multiple Personality." *Proceedings S. P. R.*, 1887, p. 499. *Automatic Writing*, 1885, p. 39.

³ *Leçons de clinique médicale*, Vol. I, p. 438.

by a large number of distinct neurones ; that is the centre of the personal self—conscious, free and responsible. Behind is the AVTEMK *polygon* of the superior automatic centres, on the one side, the sensory receptive centres—A (auditory centre), V (visual centre), T (centre of general sensibility) ; on the other, the motor centres of transmission—K (kinetic centre), M (centre of articulate speech), E (writing centre). These centres, all situated in the grey substance of the cerebral circumvolutions, are connected with each other in all directions by intra-cortical, intrapolygonal fibres, connected to the periphery by subpolygonal centripetal and centrifugal organs and connected with the superior centre O by upper-polygonal fibres, some centripetal (ideo-sensory), others centrifugal (ideo-motor).¹ 1

The following are some illustrations of the manner in which Professor Grasset makes use of his scheme for analysing facts. "When Archimedes came out into the street in his bath costume, he walked with his polygon and cried : 'Eureka' with his O. When the talker poured out drink for his neighbour at the table, until he was swamped, he did this with his polygon, but O was not inactive ; it was talking ; too absorbed with the conversation, he forgot his polygon. . . . In distraction there is a disconnection between the two psychisms, but there is not the annulment of O. . . . Condillac distinguished between the self of habit and the self of reflection ; the first is polygonal, the second is in O. In sleep psychism is not wholly suppressed : O rests, but the polygonal psychism persists. . . . The state of suggestibility, characteristic of hypnotism, is constituted by two psychic elements equally essential :—

" 1. The *upper-polygonal dissociation*, that is to say,

¹ Dr. Grasset, *De l'automatisme psychologique* (inferior psychism ; cortical polygon) in the psychological and pathological condition, Vol. III, p. 122. *Leçons de clinique médicale*, Vol. I, p. 436.

the suppression of the action from the centre O of the subject on its own polygon;

“ 2. The *malleable condition of the polygon*, that is to say, that the polygon of the subject liberated from its O preserves its own activity, but absolutely and immediately obeys the O centre of the magnetiser, in such a way that the hypnosis of the subject is the substitution of the O of the hypnotiser for the personal O centre of the hypnotised subject,” etc., etc.¹

Briefly, this hypothesis of Grasset appears to us only to be a way, though a very ingenious and convenient one, of schematically expressing, in the terms of anatomy and cerebral physiology, Pierre Janet's hypothesis of mental disaggregation and restriction of the field of consciousness, themselves connected with a certain weakness of synthetical power or with a condition of *psychological poverty*.

We now find ourselves confronted with a purely psychological explanation, at least, if we can give the name “ explanation ” to a theory which, in short, only summarises the facts in a generalising interpretation.

It seems that the principle from which all the others are derived may be the suspension or the weakening of a certain power, of a certain operation (which we can call what we wish) which is the common base of will and judgment, and which we may characterise by the words “ synthesis ” and “ creation.”

“ Things seem to come to pass,” says Pierre Janet,² “ as if there were in the mind two different activities, which sometimes are the complement and sometimes the obstacle to one another. As the ancient philosophers said, to be is to act and to create, and the consciousness, which is in the highest degree a reality, is in the same way an impelling activity. This activity, if we endeavour

¹ *Leçons de clinique médicale*, Vol. I, p. 436.

² *L'automatisme psychologique*, Conclusion, pp. 484-7.

to make its nature clear to ourselves, is, above all, a synthetical activity which brings together the more or less numerous given phenomena into a new phenomenon different from the elements. There is thus a real creation. It is impossible to say what are the first elements thus combined by the consciousness. But what is certain is that there are more and more complicated degrees of organisation and synthesis. In the same way that entities composed of only one cell are all alike and that composite beings of several cells begin to take distinct forms, the vague consciousness of pleasure and pain become by degrees determinate sensations and of different kinds. . . . These sensations in turn, are organised into more complicated conditions which we can call general emotions; these are unified and form, every moment, a special unity which we call the idea of personality, whilst other combinations form different perceptions of the external world. Some minds go beyond, synthesising perceptions into judgments, into general ideas, into moral, scientific and artistic conceptions." In all these grades "the nature of the consciousness is always the same." But there is also, in the human mind, "a second activity, which I cannot better designate than by calling it a *conservative* activity. Syntheses, once constructed, are not destroyed; they continue and preserve their unity, they keep their elements arranged in the order in which they have once been placed. When we are placed in favourable circumstances, we see that sensations or emotions are prolonged with all their characteristics to the utmost. Better still, if the synthesis previously accomplished is not completely given, if there only exist in the mind some of its elements, this conserving activity will complete it and add the absent elements in their order and in the manner necessary to remake the original whole. In the same way as the preceding activity tended to create, this tends to conserve and repeat. The highest

manifestation of the first state is synthesis, the principal characteristic of the second is the association of ideas and memory. . . . These two activities generally exist together; upon their agreement and equilibrium depend the health of the body and the harmony of the mind. . . . When the mind is normal, it only leaves certain minor actions to automatism, which, the conditions remaining the same, may without inconvenience be repeated, but it is always active in order every moment of life to effect new combinations which are constantly necessary in order to maintain its equilibrium with the changing surroundings. . . . But when this creative activity of the mind, after having worked from the outset of life and accumulated a quantity of automatic tendencies, suddenly ceases to act and rests itself before the end, the mind is then completely unbalanced and left uncontrolled to the action of only one force. The phenomena which occur are no longer joined together in synthesis, they are no longer grasped in order to form, every moment of life, the personal consciousness of the individual; they then go naturally into their former groups and automatically lead to combinations which were reasonable in former conditions. Doubtless if a mind of this nature is maintained with caution in artificial and unchanging surroundings, if by suppressing the changes in circumstances we can save it from the trouble of thinking ¹ it may last for some time, weak and vacant. But when the surroundings are modified, when misfortunes, accidents or merely changes demanding an effort of adaptation and new synthesis occur, it will fall into the greatest disorder."

We may, it is true, ask if this interpretation fully accords in detail with all the facts which we have expounded and, particularly, if it takes sufficient account of the tendency of the conserving activity or cryptopsychy

¹ We may add "and of wishing."

to assume at least in a large number of cases, the form of a new personality and to manifest under this form powers of perception and memory, often even of imagination and reasoning, equal or even superior to those of the creative activity normally identical with the usual central personality.

Thus certain classes of people, doubtless because they had special regard to this circumstance, more easily observed in mediums or some hypnotic subjects than in hysterical persons, have thought it necessary to modify Janet's hypothesis in a wider, but, most certainly, less scientific direction. Believing that they have discovered in the subconscious activity some faculties which the conscious activity does not possess (now a disturbing and now a curative action exercised on the organism, *e. g.* telepathy, thought penetration, second sight, projection of sensibility, motricity, etc.), they have concluded that the first is really anterior and superior to the second which is not of an infra-normal, but a *supra-normal* order. That is the hypothesis developed, with more or less important variations of detail, by partisan spiritistic writers, such as Aksakof,¹ Dr. E. Gyel,² and more recently in the posthumous work of F. W. H. Myers.³

"When the personality or the external consciousness, is sleeping," says Aksakof, "something else arises, something which thinks and wills, and which is not identified with the sleeping person and is manifested in its own characteristic traits. For us, it is an individuality which we do not know; but it knows the person that sleeps and remembers his acts and thoughts. If we are willing to admit the spiritistic hypothesis, it is clear that it is only this internal nucleus, this individual principal which can survive the body, and all that

¹ Aksakof, *Animisme et spiritisme*.

² Dr. E. Gyel, *L'être subconscient*. Paris: F. Alcan, 1899.

³ F. W. H. Myers, *Human Personality and its Survival of Bodily Death*. London: Longmans, Green & Co.

belongs to the terrestrial personality will be only a matter of memory."

"The psychical entity," says Dr. Gyel, "includes two essential parts: (1) the conscious self, which only represents the least important part; (2) the subconscious self, which constitutes the principal part. The conscious self depends in a great measure on the organic functioning and is inseparable from it. The subconscious self includes Force, Intelligence and Matter. It is capable of perceptions and actions not accessible, in the major part, to the direct and immediate will, and knowledge of the being in normal life. As it is in a great measure independent of the present actual functioning it is susceptible of externalisation. It is the synthetical product of the present consciousness and anterior consciousness. After death the conscious entity disappears, but its integral recollection persists in the subconscious entity. Its psychic elements remain united in the subconscious synthesis, with the psychical elements which constitute the anterior consciousness. In short, the subconscious entity may be the real self, the permanent individuality; whilst the conscious entity may be the apparent self, the transitory personality. The individuality would itself be the synthesis of successive personalities conserved integrally."¹

"The conscious self, as we call it, of each of us," says F. W. H. Myers, "the empirical, supraliminal self, as I should prefer to say, does not include the totality of consciousness or power which is in us. There exists a more comprehensive consciousness, a deeper power, which remains in a greater measure potential, so far as terrestrial life is concerned, but of which the consciousness and power of terrestrial life are only the limitations and which is reconstituted in its plenitude after the liberating change of death." "I regard every man," he said, "as being at once profoundly one and infinitely composite, as inheriting from his terrestrial ancestors a multiple and 'colonial' organism—polyzoic and, perhaps, poly-psychic to an extreme degree; but also as governing and

¹ Dr. E. Gyel, *L'être subconscient*, pp. 128-131.

unifying this organism by a soul or spirit which is absolutely beyond our present analysis—a soul which has taken its origin in its spiritual or metetherial surroundings, which, even when it is incarnated, continues to exist in these surroundings; and which will continue to exist, even after the dissolution of the body.”

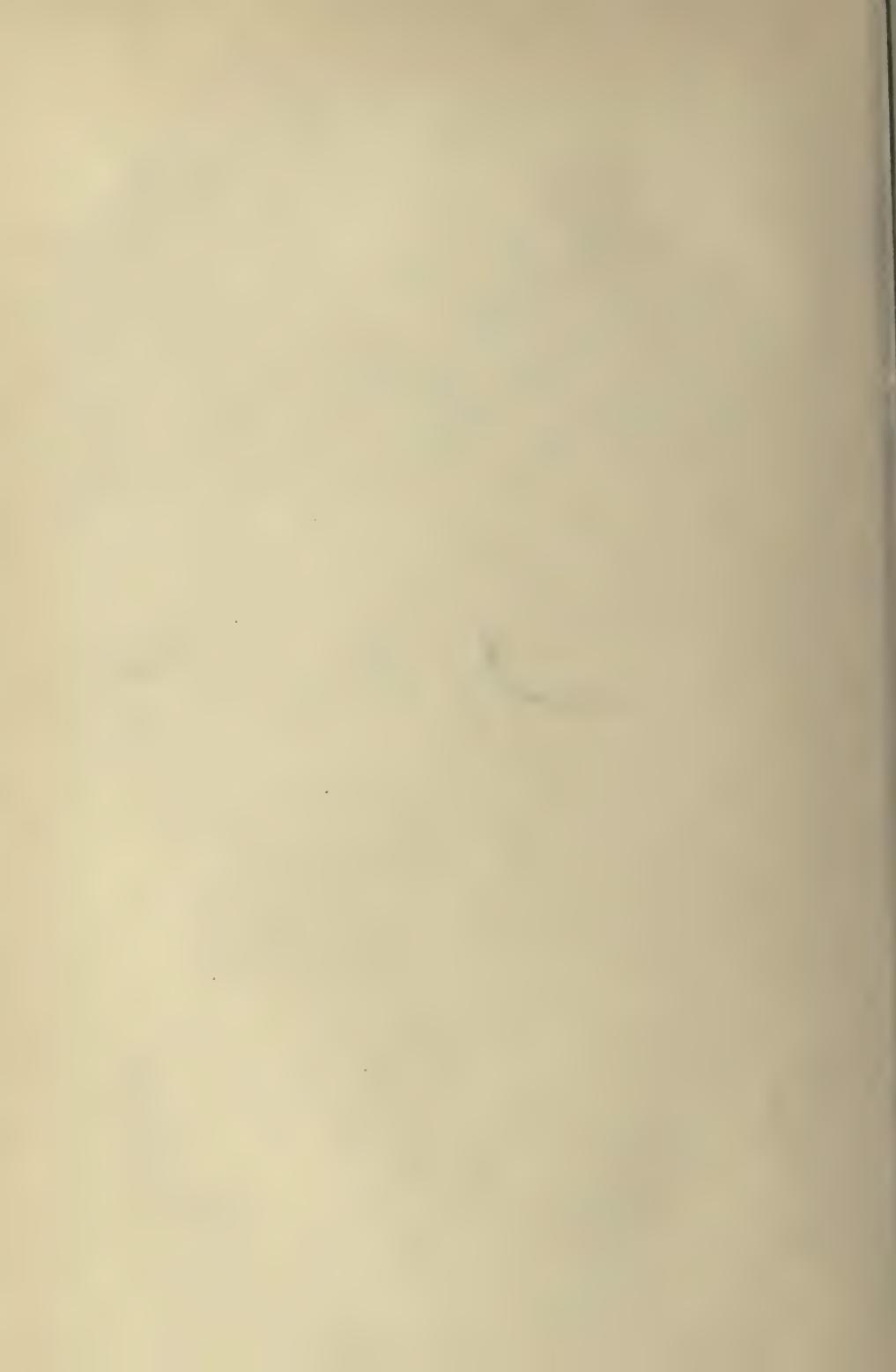
But we might go further still; we might ask ourselves if this transcendental or subliminal self is necessarily individual, if it is not, on the contrary, beyond the limits of the organisms in each of which it manifests itself, if it does not constitute a kind of common, universal fount, in which different spirits would be plunged and where they would more or less interpenetrate each other. Thus pantheistic or monistic form would be given to the monadistic or pluralistic hypothesis of F. W. H. Myers and Gyel. It is towards this conception that M. A. Goupil is inclined, the author of a very interesting and very little known treatise on spiritistic observations.¹

In our opinion, it is premature to endeavour to give an explanation of such complicated and obscure phenomena;

¹ *Pour et contre, recherches dans l'inconnu*, Tours, 1893, p. 63. Discussing the spiritistic hypothesis under its usual form, M. Goupil observes that if certain facts—amongst others those which he has just reported—seem to prove the intervention of minds distinct from those of the sitters and the medium, nevertheless, “this or these occult intelligences have never furnished any useful information. Have they ever advanced humanity? Have they spoken of eccentrics, gear-wheels, or explosives before their discovery? The spirits announced the conquest of the air when we became interested in aerial navigation. They only tell us what is generally known, although the information may sometimes exist in brains far removed from the group in which they are operating. What are we to conclude? *That the cerebral functions of humanity are collected together in one general intellect which is manifested in the phenomena.*” This is also the theory given through the pen of the writing medium Mme. Goupil (p. 80) in the account of the séance held on December 29th. The question: “Who is there?” provoked the following reply: “I do not see any use in giving you my name; though I may be either one or the other, I am always the same mind. What can it matter to you who I am? I am the Universal Mind, I am powerful according to my will, and I play the part of people whom you know.”

and the only scientific hypotheses admissible are those which may help to direct our researches by suggesting precise experiments. But evidently that is not the characteristic of those which we have been considering. It will be time to elaborate a general explanation of cryptopsychy, when by a rigorous and persevering application of the experimental method, the results and conditions, which we may, with Claude Bernard, call its *determinism*, shall be scientifically established. Until then the efforts of investigators should be directed towards establishing this determinism.

PART III
MAGNETOID PHENOMENA



CHAPTER VII

THE HYPOTHESIS OF ANIMAL MAGNETISM ACCORDING TO RECENT RESEARCH

THE facts which I am about to relate will appear so strange to the majority of my readers, and so difficult to connect with the present known laws of physics and physiology that it is not without hesitation that I have decided to give them to the public.

Moreover I am not ignorant that even to-day a certain discredit attaches still to this branch of research, as though there remained in many minds some of the superstitious terror which these apparently supernatural phenomena have inspired for so long. Whoever ventures on this study ought to resign himself to being regarded by many men as emulating the sorcerers of the Middle Ages, and the least evil that can befall him is to be looked upon as a charlatan, or of so weak and credulous a mind as to be in love with the marvellous.

Even amongst those who agree to recognise that these researches may not be entirely objectless, there are those who reckon that the experiments which are entailed are dangerous for those who are submitted to them and immoral in those who practise them; and who would gladly see them prohibited by law. The opinions of the great majority of savants are not much more favourable. In spite of the examples of Charcot, Dumontpallier, Bernheim, Beaunis, Charles Richet and others, the vast majority abstain from personally studying these phenomena or even enquiring as to the results of the study

which others have been able to make; they experience a regret mingled with pity or disdain every time one of their colleagues interests himself in such ventures.

I have several times heard the opinion expressed in scientific surroundings, that it was sad that Charcot had compromised his authority by the study of hypnotism and that it was, without doubt, the least praiseworthy part of his work. Such phenomena are regarded as too obscure, too capricious, and leave too great an opening for illusion and fraud for a real savant ever to concern himself with their study; they are the natural lot of tricksters and performers and are not worth the trouble of discussing.

Finally, even those who study them plead extenuating circumstances. They excuse themselves for endeavouring to submit them to scientific investigation by remarking that they scrupulously limit their studies to a restricted number of very simple and positive facts, the explanation of which does not presuppose any unknown force or mysterious agent, to wit, the facts of hypnotism and suggestion, and they are resolute in closing the door of science against all facts which cannot be included in this category.¹

What reception then can the rash person expect who, without being physicist or physiologist by profession, undertakes to rehabilitate the old hypothesis of animal magnetism, not as a more or less probable theory but as a simple expression of verified experimental facts?

¹ We must observe that English men of science have been less exclusive and timid than French; many of them belong to the Society for Psychical Research, which definitely proposes to study all the phenomena of this category, and the American scientists seem inclined to follow their example. In France Drs. Charles Richet and Dariex have inaugurated a review, *Les annales des sciences psychiques*, which is specially concerned with the study of the facts of telepathy and publishes accounts of very interesting observations, but does not, yet, seem to have succeeded in overcoming the indifference or even the hostility of French savants to these researches.

More than a century has passed during which the partisans of this hypothesis have striven unsuccessfully to introduce it into science, and at this moment it might well be thought that the cause was irrevocably lost. Scientifically, the dispute is only now between hypnotism and suggestion; animal magnetism has been struck out. However, the truth has always the right to appeal, and sooner or later it will end by gaining the day. This assurance emboldens us to ask for the revision of a judgment which was too hastily believed to be final.

I

In order thoroughly to understand the position of the question, it is, perhaps, first of all necessary to characterise clearly the three conflicting theories: magnetism, hypnotism and suggestion.

The first observers of the singular phenomena produced by the mesmeric process attributed them, with Mesmer himself (1779) and Puységur (1784), to the action of a force emanating from the operator and radiating towards the subject, a force analogous to that of the magnet; hence the name of animal magnetism. According to them, the look, the imposition of hands, the passes, the breath, send to sleep or awaken (cause muscular contraction or relaxation), excite or paralyse the vital functions and intellectual faculties, because they serve as vehicles for this force that they transmit from one nervous system to another. The name which is given to it and the particular manner in which it is represented are, however, of slight importance. Whoever admits that a physical influence can be exercised at a distance between two living beings thereby admits the hypothesis of animal magnetism under its most simple and general form.

We know how Braid (1843) reproduced the majority

of the effects obtained by magnetisers by putting altogether different processes into action. Prolonged gazing on a brilliant object or any other equivalent manœuvre was sufficient to produce in certain persons a numbness of the brain more or less deep, which rendered them capable of presenting the greater number of the phenomena, until then attributed to magnetic influence. There was no occasion here to postulate an unknown force; the operator did not send the subject to sleep, the subject sent himself to sleep, as the result of the fatigue or exhaustion of his nerve centres. Thus Braid substituted the name of hypnotism for that of magnetism, and, under this new name, the facts so long disputed were eventually admitted by official science when Charcot, in 1879, made it the subject of his well-known lectures at La Salpêtrière. The School of Paris, of which Charcot was the chief, adopted and completed the explanation of Braid. The initial cause of all the phenomena, according to that school, is found to consist in a modification of the nervous system, nearly always produced by a sudden or prolonged excitation, but this modification is only possible under the previous condition of a special diathesis, which is only met with in hysterical or, at least, neuropathic subjects.

Whilst agreeing with the School of Paris in assigning a subjective cause to the sleep provoked, the School of Nancy see this cause in suggestion, that is to say, in the conviction and expectation of the subject who himself realises the suggested effect. Already in 1813, the Abbé Faria explained by the influence of the imagination alone all the effects which, up till then, were attributed to the magnetic fluid, and he converted General Noizet and Dr. Bertrand to his opinions. Dr. Liébault, in 1868, espoused the same thesis, but without much success, until Professor Bernheim became its advocate and opposed it to the Paris doctrine. "Suggestion," said Bernheim, "is the key

to all hypnotic phenomena," and going still further : "there is no such thing as hypnotism, there is only suggestion." That amounts to saying that not only the processes of Mesmer but also those of Braid owe all their efficacy not to a special physical or physiological action, but to suggestion alone.

Thus agreed in rejecting the objective explanation of the partisans of animal magnetism, the School of Paris and the School of Nancy have nevertheless, very different conceptions of the whole of these phenomena. For the latter, there not being any other cause than suggestion to which everybody is more or less sensitive, they can, in fact, be produced in all with greater or lesser intensity, and in their evolution they only comply with the imagination of the subjects or the will of the operators and the practices which may result from one or the other. For the former, they depend, before everything else, upon a material substratum, the modalities of a pathological condition clearly determined in itself, although imperfectly known to us, and that is why it cannot be provoked in everybody but only with a certain class of patients, and whatever influence suggestion may have on them, they are none the less obedient, in their evolution, to definite laws, such as those for example, which succeed each other in a certain order—catalepsy, lethargy and somnambulism—and characteristic properties are attached to each of these three conditions. Further, the extraordinary influence of suggestion on subjects is itself conditioned and limited by the quite special disposition of their nervous system and brain : far from suggestion explaining hypnotism, it is hypnotism which explains suggestion (and it is, moreover, necessary to prevent this from being confused, as the School of Nancy has done, with the moral influence which men exercise normally one on another by persuasion, authority, example, etc.).

We have not here to decide between the two doctrines. To speak frankly, we believe that they each contain part of the truth, and we willingly apply to them Leibnitz's comment on the philosophical schools: "the majority of sects are right in what they advance, but not in what they deny."

Both argue as if the same effect can only be produced by one cause, and we see the same argument opposed by both to the hypothesis of animal magnetism.¹ "We produce," say the School of Nancy, "somnambulism, catalepsy, lethargy, contractures, etc., by suggestion alone; therefore, everywhere and always, these phenomena do not recognise any other cause, and when we think they are produced in any other way, it is suggestion alone which, unknown to the operator, causes the efficacy of the processes which he employs." "We produce," say the School of Paris, "all these phenomena by hypnotism alone, under the preliminary condition of hysterical diathesis; therefore, everywhere and always these phenomena do not recognise any other cause, and when we think they are produced in any other way, it is hysteria alone, more or less induced by hypnotism, which, unknown to the operator, causes the efficacy of the processes which he employs." Both would derive great profit by meditating on the chapter in Stuart Mill's Logic which has for its title: "On the Plurality of Causes and Mixture of Effects." They will there be taught "that it is not true that an effect always depends on one cause only or on one assembly of conditions, and that a phenomenon cannot be produced in any other manner. There are often, for the same phenomenon, several independent methods of production. One fact may play the part of consequent in many invariable successions. A multitude of causes may produce movement; a multitude of causes may produce certain

¹ See Chap. II: "The Paradoxes of Causality."

sensations; a multitude of causes may produce death. A given effect, although really produced by a certain cause, may yet very well be produced without it.”¹

But the phenomena of “nervous sleep,” as Braid called it, with all those connected with it, constitute precisely, in our opinion, the most significant example perhaps of the plurality of causes. Thus lethargy, catalepsy, somnambulism and all analogous states may be spontaneously produced as the result of natural causes which are still unknown to us, but we believe there is no doubt that we can also produce them experimentally by putting two very different actions into play—hypnotic and suggestive action. No one disputes to-day the fact that suggestion is sufficient in a large number of cases to produce all these phenomena, and, on this point, the School of Nancy has won. But does it follow that another influence cannot, in other cases, produce the same effects? Doubtless, in an experiment which has for its object sending a person to sleep, it is often very difficult to eliminate suggestion. However, when we place a cock in a cataleptic condition by Father Kircher’s process, by placing its beak on a line drawn with a chalk, a firm resolution to be satisfied with words is necessary in order to attribute such an effect to suggestion. Certain attitudes and manœuvres have, by themselves and independently of all suggestion, the property of benumbing the nervous centres and producing sleep; that seems to us to be as certain, although as little explained, as the soporific efficacy of opium.

In short, for any one observing the facts without prejudice there exist, at least, two perfectly distinct actions, each of which may be sufficient separately to produce all the effects produced by the other, although they are nearly always met with in combination, namely, the

¹ *System of Deductive and Inductive Logic.*

suggestive and hypnotic actions, the one of a physiological, and the other, of a mental order.¹

We can now understand why it is that the discoveries of Faria and Braid have in no way injured the hypothesis of animal magnetism. Although hypnotism and suggestion exist, it does not follow that animal magnetism has no existence. It is by no means absurd to suppose that the effects produced by these two causes may not be produced by yet a third. All that we are entitled to demand is an experimental proof of the existence of this third cause, and that we do not attribute to magnetism the effects clearly produced by suggestion or hypnotism, as was done before Faria and Braid, and, it must be admitted, is still done by the partisans of animal magnetism.

The whole difficulty, and that really a very great one, is to collect the observations, or better still, to institute experiments from which hypnotism and suggestion can be rigorously excluded and where, notwithstanding, we witness results inexplicable by any other hypothesis than that of an influence proceeding from the operator to the subject, more or less analogous in consequence, to that of physical magnetism. But if it appears possible to exclude hypnotism, can it be the same with suggestion, which intervenes in some way fatally in every experiment, particularly under the form of auto-suggestion, from the mere fact that an experiment is on hand and that therefore the subject expects something will be produced, imagining a result in advance and even unconsciously provoking it? That is the great stumbling-block

¹ Hence a whole mass of questions and researches which are in some way suppressed *a priori* by the theories of the two rival schools; we refer to all those which concern the connection between hypnotism and suggestion. For instance, is every hypnotisable individual, therefore, suggestible and *vice versa*? Are these two susceptibilities always inseparable and in proportion one to the other?

which has hitherto made all the efforts of the magnetisers powerless. "Beware of suggestion," is the advice that cannot be repeated too often to all who enter upon this study.

So far as we are concerned we began by being profoundly convinced of the absolute truth of suggestion, independently of the present beliefs on this subject, and when we heard the advocates of magnetism speak of their pretended fluid we could not prevent ourselves from wondering at their ignorance. We had privately verified so often the omnipotence of suggestion on subjects that, with the School of Nancy, we were not far from seeing in it the key to all phenomena of this character, although it also appeared to us probable that it might depend upon a particular cerebral and mental condition of an unknown character, susceptible of being provoked in certain individuals by hypnotic experiments and probably existing in a natural and permanent manner in certain others. But if we still continue to see in suggestion, as thus understood, a great and incontestable truth, how is it that we have ceased to see there the one and only truth? To reply to this question is to give the story of our researches.

II

Everybody will doubtless recall the well-known experiments at Havre, the report of which M. Pierre Janet presented to the *Société de psychologie physiologique* in 1885 under the modest title of "Notes on some Somnambulistic Phenomena" (*Revue philosophique*, Vol. XXI, p. 190).

In these experiments a subject had been sent to sleep on several occasions by a mental command given her unexpectedly and unknown to her, by an operator placed

at distances ranging up to nearly a mile and a half, in such conditions as to prevent all chance simulation or possible suggestion. Not wishing to suppose that the experimenters would take delight in mystifying themselves and that the object of their experiments was to mystify those who looked upon them as serious, injurious and inadmissible suppositions, I asked myself, doubtless like more than one reader of this account, if the old hypothesis of animal magnetism, more or less modified, was not by itself capable of accounting for similar facts excluding the academic theories of suggestion and hypnotism. But this doubt only lightly touched my mind, because one is but little affected by rare and exceptional facts, depending on a multitude of unknown conditions impossible to reproduce every time we desire them, as seemed to me to be the case with somnambulism provoked at a distance.¹

There only remained with me the vague suspicion that there was, perhaps, something beyond hypnotism and suggestion.

However, when I began to experiment personally, the only method of forming definite convictions in this class of studies, I was struck several times in the course of my experiments by certain phenomena, in which this "something" seemed half to appear, but in which it was never possible for me to grasp it definitely.

One of the first subjects with whom I experimented, Robert C., a mechanic of nineteen years of age, declared

¹ This inclination, which is common to all minds, and even to scientific minds, is what Bacon calls an *idola tribus*, because a fact of this character belongs to the natural order in the same degree as all others and is, like them, produced by reason of a law which is virtually universal. If it is carefully ascertained and analysed we could draw a general conclusion, though we might have only observed it once. To do otherwise is to look upon this fact as a miracle or to treat it as though it had no existence. I ought to add that I have since, on several occasions, provoked sleep at a distance in conditions which convinced me of the reality of the phenomena. (See Chapter X.)

that when I placed my right hand over his, he experienced a sensation of burning heat, and when I raised my right hand, his rose also as though attracted, but when I made him close his eyes the phenomenon was no longer produced, so that this pretended magnetic effect seemed to me to be clearly due to auto-suggestion.

Must we attribute the same cause to the effect of the well-known process of the experimenter Moutin ? On placing the hands, fully extended, on the shoulder-blades of a person, the thumbs linked together over the vertebral column, this person would often be drawn back with such force that he would lose his equilibrium or be compelled to walk backwards. I have obtained this phenomenon many times apart from all verbal suggestion. But may we not say that the application of the hands is equivalent to a tacit suggestion of a support and their withdrawing to a tacit suggestion of a loss of equilibrium ? What perplexed me more was that I had observed, particularly with feminine subjects, that by repeating the experiment a certain number of times the subject often ended by feeling herself drawn even irresistibly, when the operator behind her had his hands in his pockets. On the other hand, *from the first occasion* I have attracted subjects absolutely ignorant of the nature and effects of this experiment, subjects virgin to hypnotism and magnetism, by putting my hands behind their backs, *without contact*, at one and a half to two inches away. I have even succeeded in attracting one of my friends, a doctor of medicine and very sensitive to this process, the body of another person intervening, this other person absolutely insensible and incredulous, offering his back for the application of my hands and scarcely touching the subject. Every withdrawal of my hands was immediately followed by a movement of attraction in him. But may we not again suppose that in all these cases there were some

auto-suggestions produced by unconscious or subconscious perceptions, such as those which seem to be sufficient to explain the experiments of Cumberlandism ?

My doubt still continued even after observing much more extraordinary phenomena still, precisely, if I may say so, because they were too extraordinary.

For six months I had had a young Pyrenean of fifteen years of age as servant—Jean M.—of extremely hypnotic sensibility; and the following are the notes which I took of experiments carried out with this subject.

I have only to place my open hand behind his elbow or any part of his body in order rapidly to bring about jerks, movements, etc., and that, so far as I can judge, without anything telling him of my action, whilst he has his back turned to me, is engaged in reading, talking, etc. Several times when he was asleep naturally, it was sufficient for me to extend my hand over him, at a distance of five or six inches, to see his chest expand, rise, as though drawn by my hand as it rose, and fall back when the distance became too great. Magnetic influence perhaps, but also perhaps, the simple phenomenon of hyperesthesia of touch.

The second hypothesis became more difficult to admit from the following fact which is so strange that if someone were to relate it to me I should probably charge him with falsehood or illusion, and of which I give the account exactly as I find it in my notes :—

One Sunday afternoon in January 1893, on returning to my house after a short absence about three o'clock, I asked where Jean was. I was told that having finished his work and feeling tired he had gone to lie down. Going into my room I saw that the door which opened on to the landing was open; the door of Jean's room which was on this landing was also open. I went towards it noiselessly and remained on the staircase, looking at the sleeper.

He was lying fully dressed on his bed, his head in the corner opposite the door, his arms crossed on his chest, his legs placed one over the other, his feet lightly hanging over the edge of the bed. I had been present the day before at a discussion on the reality of magnetic action. I thought I would make an experiment. Standing on the landing at a distance of about three yards, I extended my right hand in his direction and at the height of his feet. If we had been in the dark and my hand had held a lantern the light would have fallen on his feet. After one or two minutes, or probably even less, I slowly raised my hand, and to my great astonishment, I saw the sleeper's feet rise together by a muscular contraction which began at the knees and follow the ascending movement of my hand in the air. I repeated the experiment three times and the phenomenon was reproduced three times with the regularity and precision of a physical phenomenon. Amazed, I went in search of Mme. Boirac, asking her to make as little noise as possible. The sleeper had not moved. Again on two or three occasions his feet were attracted and raised by my hand. "Try," Mme. B. said to me in a low tone, "to do it by thought." I fixed my eyes on his feet and they slowly rose. Incredible! The feet followed the movements of my eyes, rising, stopping and descending with them. Mme. B. took my left hand and with her free hand did as I had done myself; she succeeded equally with me; but when she ceased to touch me, there was no result. She wished to continue the experiments but I was so disconcerted by what I had seen that I refused, thinking moreover I might fatigue the subject. In fact Jean woke about half-an-hour later and complained of sharp pains in his legs, and convulsive movements in his knees, which I, with much trouble, relieved by friction and suggestion.

The misfortune of such facts, which are almost impossible to reproduce experimentally, is that we prefer to imagine anything rather than to believe in their reality and admit the consequences they imply. A few hours after seeing them we doubt the evidence of our senses and

memory, and I should not be at all surprised if some of my readers felt certain that my subject was not asleep, but that, knowing my intentions, he simulated all these phenomena of magnetic attraction.

Where then can we find the fact which would finally overcome all doubts—the material, objective fact, capable of being reproduced at will, outside of all simulation and possible suggestion? This fact chance had already presented to me, as it has doubtless been presented to others; but I did not know how to comprehend it, I had not seen how to use it for a methodical experimentation. It was necessary for chance again to present it to me in such circumstances as to fix my attention in order that it should become the starting-point for a new series of researches and eventually assure me of the reality of animal magnetism.

III

I ought to give here first of all some details concerning the subject with whom the experiments were made.

Gustave P., a working electrician, was sent to sleep by me for the first time in the winter of 1892 by prolonged gaze: he was then eighteen years of age. He had never had any serious illness or suffered from any accident to the nerves; his sensibility seemed to me to be normal. He was only looked upon by those who knew him as a dreamer and as being weak in character. In 1892 and in the early months of 1893, I only made a small number of experiments, but these were sufficient to prove to me that he was hypnotisable and open to suggestion in the highest degree. I had entirely lost sight of him when I again discovered him in February 1894. I then began to experiment regularly with him, and from the first sitting I ascertained the following facts:—

Under the action of my right hand placed in front of

his forehead, he passed successively into three different conditions. At the end of about thirty seconds, without any external sign beyond perhaps a slight movement betraying the effect produced, he went into the first condition, similar to that which certain authors have called the state of *fascination*, or *credulity*, or *suggestive* condition, denoted by three main characteristics : *Amnesia* ; he is not capable of any recollection, he can no longer remember his name, profession, address, etc. ; Absolute *Credulity* and *Suggestibility* ; he believes, feels and does all that I suggest ; *Persistence of sensibility and Voluntary Movements* ; his limbs raised in the air fall of their own accord and he experiences naturally contacts, pinchings, etc., unless I provoke paralysis and anesthesia by suggestion. Again placing the right hand in front of his forehead for thirty seconds, he passes into the second state—cataleptoid. The arms, legs, etc., remain in the position in which they are placed, the movements communicated continue automatically ; there is, apart from all suggestion, complete insensibility of the skin. He does not reply, or scarcely replies, to questions put to him. Another presentation of the right hand leads to somnambulism, the eyes close and the subject recovers the use of his speech and intellectual faculties. If I place the left hand in front of the subject while he is in a somnambulistic condition and withdraw it after thirty seconds, he passes into the second state ; in the same way if I present it after the second state he passes into the first state. If the left hand is presented in the first state he awakens. I obtained this effect *without any verbal suggestion* at the first séance and it remained constant afterwards. I do not undertake to explain it, I only observe it. Thus while he was asleep I suggested that the word *Mane* should cause him to fall into the state of Fascination, that of *Thecel* into the cataleptic, and the word *Phares* into the somnambulistic state, and this suggestion has always regularly produced the effect. It preserved its efficacy even after an interval of eight months during which I did not see the subject at all.

Beyond this singular polarity of the right hand

provoking the different degrees of sleep and the left hand provoking the different degrees of awakening I did not observe anything with Gustave P. which did not come within the compass of the phenomena already studied by the schools of hypnotism and suggestion, when an unexpected phenomenon suddenly opened my eyes to a new path.

The subject had been coming to me for about two months, twice a week, for the purpose of these experiments. One Sunday morning he came into my study and was seated at the side of my table on which his left elbow was leaning. Whilst I was finishing a letter, he conversed with a third person towards whom he half turned. I had placed my pen down, and my arm was stretched out on the table with the fingers at full length and, by chance, in the direction of his elbow. To my great surprise I thought I saw his elbow move as though attracted by my hand. Without saying a word the subject continued to converse and appeared to be quite ignorant of what had happened; I raised my arm slightly and the subject's arm rose at the same time. But as if the attraction in becoming strong had aroused his consciousness, Gustave P. suddenly interrupted his conversation, brought his right hand to his left elbow, which he quickly withdrew, and turning towards me: "What are you doing to me?" he said.

Since then, at the commencement of the séances which followed on in the intervals of the somnambulistic experiments, I contrived to distract the attention of the subject in order to place my right hand, unknown to him, in front of one or other of his elbows, knees, feet, etc., and always observed the same phenomenon: attraction of the limb thus covered which seemed to cease to belong to the subject and to fall under the dominion of my will, until the time when some sort of abrupt movement would inform the subject of these involuntary movements and he would withdraw himself from my influence. But, I thought, this is precisely the fact which ought to serve as proof of the reality of a personal action, of a nervous radiation from the operator, which may be called animal

magnetism or by some other name; the name scarcely matters, but how are we to know if the subject, however distracted he may appear, does not watch from the corner of his eye the hand covertly turned towards his leg or arm, and if he does not simulate, at least how can we know if he cannot see unconsciously and if he is not the subject of auto-suggestion ? How is it possible to suppress the possibility of simulation or auto-suggestion ?

On reflection I said to myself that the most sure means would be to blindfold the subject and hermetically seal his eyes. I therefore made a black cloth bandage sufficiently thick to intercept completely the light by muffling his eyes and nose. Then without saying anything to the subject as to the kind of experiments I was going to carry out, I ask him to let me put on this bandage and to remain perfectly motionless on his chair for a few moments. Then drawing close to him without any noise I placed my right hand about three or four inches away from his left hand, and presently, in less than half a minute, this was attracted. The same effect was produced on the other hand, the right and left elbows, the right and left knee, the right and left foot, etc. It goes without saying that I did not follow any order, but intermixed the actions in as many ways as possible, in order that the subject might not guess by any reasoning what part of the body I was covering. And yet there was always concordance between the direction of my hand and the movement obtained. Moreover, this was not done in one séance only, there were more than ten séances in which I observed the same phenomena.

In the first séance I only used my right hand; at the second séance, after having reproduced and verified all the results of the first, I thought of acting with the left hand, always be it understood, without saying a word. Immediately, instead of the expected attraction, I saw tremblings and jerks produced in the limb covered and the subject cried out : " You have not made me do that before, pray leave off; it is too unnerving, it is just as though you were pressing a thousand needles into my skin." I complied with his request and asked him to

describe to me as nearly as he could his impression. After reflection, he told me that the feeling was like what he recollects of the sensations produced from a battery of five or six elements. I had hence a new method of varying my experiments, by not only varying the parts of the body on which I acted, but even the action, according as I made use of my right hand in order to produce attraction, or my left hand in order to produce tingling. But if it was difficult to suppose that the subject with bandaged eyes could see the various parts of the body which I covered, it was still more difficult to suppose that he could guess which hand I was going to use.

What would happen, I asked myself after this second sitting, if I applied both my hands, one on top of the other, palm to palm, and then placed them before the subject? Probably their actions would be neutralised and their effect *nil*. But when, at the third sitting, after having experimented with the right and left hands separately, I suddenly experimented with the two hands joined together; the result was *quite different from what I had expected*. This time the subject again cried out: "What are you doing to me now? This is something different, but more unnerving than all the rest; I do not make out what you are doing—it is all a muddle, you are drawing me to you and pricking me at the same time." As a matter of fact the part covered did come in the direction of my hands and was agitated with almost convulsive movements. Thus I secured a triple action; attractive with the right hand, pricking with the left hand, and simultaneous attraction and pricking with the two hands joined; and always, or at least ninety-nine times out of a hundred, in the whole of this first series of experiments, this action was regularly produced.

I asked one of my colleagues, M. Louis B., Professor of Physics at M. College, to be present at one sitting, and, after having shown him without verbal explanation all the preceding facts, I obtained with his assistance some new facts more remarkable still. At a sign from me he placed his right hand before the subject under the same

conditions as I had placed mine and at the end of a moment the subject said to me: "Where are you? You must be far away. I feel something in my hand as if you wished to draw me to you, but it is much weaker than usual." I did not satisfy the subject's curiosity, but I thus proved that the nervous radiation is unequal in various individuals or possibly that the receptivity of subjects is stronger for the radiation of certain individuals than for others.

My colleague and I then took quite silently a copper wire covered with gutta-percha, such as was used for the electric bells in the room. I held one of the ends of bare wire in my right hand, and went as far as possible from the subject; my colleague presented the other end to him, after having rolled it round a wooden ruler which he held in his hand; and we saw the copper point produce the same effect as my right hand would have produced at the same distance, that is to say, it attracted the part of the subject's body which it pointed to. I substituted the left hand for the right; the copper wire faithfully transmitted the prickling sensation as it had done the attractive. I grafted a second wire on to the first in such a way that it could act simultaneously with the two hands, and the one wire conducted the two united actions without any confusion, which the subject called the "muddle."

I went into another room, shut the door, the wire alone which I held communicating underneath the door with the people remaining in my study. The action of the hand was again transmitted, but the experiments did not have the same degree of precision, because we were ignorant on both sides of what we were doing. However, my colleague, having placed the end of the copper wire in front of the subject's forehead at a distance of from four to five inches, he very quickly showed signs of great inconvenience, said that he felt his head was getting hot and heavy, and brought his hands to his forehead as though to remove this influence, thus compelling my colleague to take away the wire every time. I moreover noticed in a large number of sittings, that by prolonging this action of the right hand, whether directly or by the

intermediary of a copper wire, the subject, in spite of the bandage, went to sleep by passing successively through the three usual conditions, and that the same action of the left hand, whether directed or conducted, induced, through the bandage, the three degrees of awakening.

If instead of holding this copper wire I placed one end in a glass of water and presented the fingers of my right or left hand a few inches above the water, the unknown radiating force from the hand crossed the liquid and was carried by means of the copper wire with all its characteristic properties, producing either attraction or pricking in the subject at the other end.

This is not the place to explain all the details of the experiments; I merely mention the most significant.

To what degree can suggestion influence all these phenomena and supplement or prevent the action of animal magnetism? We can easily understand this is a problem of the greatest importance. I tried to solve it by the following experiments:—

1. The subject, being awake, the eyes bandaged in the usual way, I forewarn him that I am going to experiment as to the time necessary for the production of the magnetic effect, and that he should tell me exactly the moment he begins to feel it; I tell him that I am going to act exclusively by attraction on his right hand and ask him to concentrate all his attention upon this. After this preparatory suggestion, I utter the words "I am beginning," making some motion with my right hand, but without placing it in front of the subject. After one or two minutes the subject, who is very attentive, murmurs, "It is strange, I think something must have got out of order; I feel absolutely nothing." Then suddenly, "Ah, no, now I feel something; only it is in my left knee, and it is not an attraction, but a pricking." But, as a matter of fact, I am covering his left knee with my left hand.

That, with the exception of differences of detail, is

the result I have always obtained with the subject in a waking state.

It proves at least with this subject, and throughout this period of my experiments, that suggestion in a state of waking is powerless to simulate a magnetic action.

2. The subject being placed in the first condition, in which we may remember he is eminently suggestible, I ask him to fix his attention entirely on one of his hands, forewarning him that he will feel it drawn by an irresistible force. As soon as I say to him, "I am commencing," the hand, as a matter of fact, is raised, although I am not directly acting on it in any way, so that, in this condition, suggestion is quite sufficient for the simulation of the magnetic action. But if at the same time I place, without saying anything, my right hand over his other hand, this is attracted, the two effects taking place simultaneously, and being apparently identical, though really produced by two distinct causes, the one by magnetism and the other by suggestion.

3. The subject being in the state of Fascination, I suggested to him that in order to act exclusively on one side of his body, I should cause the other side to become inert and insensible, and I in fact observed the paralysis and anesthesia of this side. Here again I obtained by suggestion, outside all real action, a phenomenon of attraction in the limbs when the sensibility and motor power remained intact; but if I directed my right hand towards his knee, hand or foot which were deprived of power and sensation, I observed, in spite of suggestion, some attractive movements.

Magnetic force may therefore not only produce effects independently of suggestion, but it can in certain cases oppose and annul the effects of suggestion; here, unless I am mistaken, is the conclusion to be drawn from this triple series of counterproofs.

IV

Gustave P. having set out for the country towards the end of June 1894, to my great regret, I was compelled to interrupt my experiments. They had brought me to admit from observation the truth of the existence of animal magnetism (I use this term for the want of a better one, because it is the traditional term); but was it legitimate thus to draw a general conclusion from experiments, numerous it is true and relatively precise, all however made with only one subject ? Could not the objection be raised that these facts only proved a particular disposition, an idiosyncrasy of this subject, by no means a force or action radiating from the operator by virtue of a property common to all men, even perhaps, to all living beings ?

The objection, truth to tell, is more specious than solid ; because no case is isolated in nature ; there is no fact unique of its kind. The exceptions themselves depend upon conditions in which if we knew them and could realise them at will, the exceptional could be reproduced *ad infinitum*, and would become regular. At all times arguments are not so convincing as facts.

I therefore proposed to verify the magnetic action on other subjects, but I did not at first meet with any that had the sensibility of Gustave P. The majority experienced nothing, or the effects experienced were vague and most frequently produced in a contrary direction, which quite proved to me that they were due entirely to auto-suggestion.

I obtained some satisfactory results on persons sleeping naturally, principally on young children.

Placing the extended fingers of my right hand a few inches from the wrist I noticed in the subjects after two or three minutes, trembling movements and contractions of the hand, sometimes even sudden movements of the

whole arm, such as those which tickling would produce. It would be easy and interesting to multiply this kind of experiment.

During the month of January 1895 I had occasion to go back to the Pyrenees, where I found my former servant, Jean M., of whom I have spoken. He consented, not without difficulty, to let me put him to sleep. Not having a bandage at hand I threw my jacket over his head so that it half covered his body. In these conditions I placed my right hand about three or four inches in front of his arm, knee, foot, etc., rapidly provoking a violent attraction; when directed towards his chest the action of the hand drew the subject forward with such force that he bent down over the arm-chair and held tightly to it, grinding his teeth, until I was obliged to suspend operations.

Having attracted and raised his left arm, always under the same conditions, I described various movements in the air with my right arm, and his left arm instantly reproduced them as if it was connected with mine by an invisible thread. But I never noticed any polarity in him. My left hand produced, with except perhaps a slight difference of intensity, the same effects of shaking and attraction as my right hand. Thus the circumstances of the action might vary with different subjects, but the reality of the action for all that remained constant.

I was soon to assure myself that this action could even be felt by subjects in no way accustomed to these hypnotic experiments, in those whom I have called "hypnotically virgin." The most interesting experiment in this direction was that which I made unexpectedly on February 26, 1895, in the middle of Lent.

I was, by chance, with a company of young men, and one of them asked me to experiment with him; the result was of little account, but one of his friends, Julio M., a

young Spaniard, of about twenty-two years of age, was so greatly influenced by my placing my hands on his shoulder-blades that I could succeed with him with various suggestions. The mid-Lent cavalcade began to march past on the boulevard and the experiments were therefore suspended, and whilst Julio M. was looking at the march past, I placed my right hand behind his back at a distance of a few inches without his seeing me or suspecting my action; when I withdrew my hand he tipped backwards slightly; I repeated the motion two or three times with the same success, but the attraction presently became so strong and irresistible that he lost his equilibrium and almost fell in my direction, crying out "What have you done to draw me to you like that?" Three hours later I was sitting by the side of him in a café, and while his back was turned to me during his conversation with a neighbour, I reproduced the same results exactly. Now this young man had never been hypnotised, and was even entirely ignorant of this class of phenomena.

I cannot therefore any longer doubt that magnetic or nervous radiation exists as really as the radiation of light or heat, and I am convinced that whoever experiments under the same conditions as those under which I experimented, provided that he has the patience to look for subjects sufficiently sensitive, would verify it as I have done.

It remains, it is true, for the laws of this action to be ascertained and, in this respect, it is necessary to guard against precipitate generalisation. Some of the early experiments with Gustave P. would have led to the conclusion that this action is naturally polarised, like electric or magnetic action, for as we have seen the right and left hands had each their particular mode of influence. And yet this conclusion would have been false, because this

action is polarised or depolarised according to conditions which are as yet unknown, and of which we cannot form the slightest idea.

In fact, eight months after his departure to the country, Gustave P. came to spend a few days in Paris, and I had some more sittings with him. I noticed that he was still sensitive to suggestions made eight months previously, but when bandaging his eyes again and repeating my experiments of magnetic action I also noticed, not without surprise, nor perhaps without regret, that he had become much less sensitive to this action. It might be said that the sense developed in him under my influence had become blunted during the eight months of inaction. The results were therefore more feeble, more slowly produced, but in particular they did not present any trace of polarity. The right and left hand almost indifferently produced in the parts designated, jerks, prickings and attraction, excepting in the brain where the right hand continued to produce sleep and the left hand awakening, always, it must be understood, at a distance and in spite of the intervening bandage. From the third séance, however, this chaos of confused impressions visibly tended to clear away, and certain results followed upon the action of one of my hands more regularly than that of the other. From this we may suppose, with some probability, that there is only a slight difference of intensity between the two, that is to say, as regards quantity, which, however, for so delicate a sensibility is naturally expressed as a difference in quality, which is also the rule for our more refined senses.

V

Some fresh experiments are necessary to determine the laws of magnetic influence, but this influence itself, we

think we can boldly affirm, is no longer a hypothesis but a fact—a material, positive and precise fact—which everybody may observe, and which can be experimented with at will, fulfilling, in a word, all the conditions of a scientific fact.

It is therefore by the study of this fact, by experimental research into its conditions and consequences, that it will eventually become possible to drag the science of psychical, or rather *parapsychical* phenomena from its groove. Any other way, unless we are mistaken, leads to a blind alley. A certain order is necessary in every science, and until we discover it we wander at random. We do not wish to discourage researchers who apply themselves with so much ingenuity and perseverance to clear up the mysteries of telepathy, mental suggestion, externalisation of sensibility, or any other equally extraordinary phenomena, but we are very much afraid that they are beginning at the wrong end. It is necessary, in our opinion, to begin at the beginning, that is to say, with the most simple facts—those most easy to witness; but it seems clear that the phenomena of telepathy, mental suggestion, etc., may be among the most complicated and obscure.

Imagine for a moment that our scientists are absolutely ignorant of electricity; they have only heard of an apparatus in general use, through the reports of certain travellers in far distant countries, that it is sufficient for them to utter a few words into it in order to be heard at very great distances by the persons with whom they desire to hold conversation and for them to hear the replies given (the telephone). Would they believe such statements? The majority of men of science would look upon them as fables and shrug their shoulders. Some, however, would make inquiry, they would ask all who had any information as to this marvellous apparatus to communicate it to them,

and they would hope by this means not only to assure themselves of its existence, but also to find out the secret of its mechanism. Thereupon a number of travellers would send them the detailed account of conversations which they had had on the telephone, but without being able to explain, because they were ignorant themselves, how the communication was made. Is it not clear that we should never thus succeed in discovering electricity ? To do that we must begin at the beginning, that is to say, ascertain first of all that friction develops in certain substances the property of attracting light bodies, or at least, that zinc and copper placed in contact with acidulated water liberate a particular force, etc. Similarly if we wish to understand one day the phenomena of telepathy, it will only be after having experimentally verified the most simple and direct effects of the action which living beings can exercise one on another at a distance, and, unless we are mistaken, these results are those which we have expounded.

Is that to say that they may not have been already noticed by other observers ? Certainly not; and they could, even from the commencement, have been put on the right path, as it was just these facts which were observed by Jussieu, and which prevented him from giving his adherence without reserve to the conclusions of the royal commissioners, conclusions unfavourable, we may say, to the hypothesis of animal magnetism.

Placed by the side of the *baquet* (Mesmer's *baquet*) facing a woman whose blindness, caused by two thick films, had been certified a month previously by the commissioners, I saw her come in with a tranquil step, and for a quarter of an hour appear more interested by the iron of the *baquet* directed towards her eyes, than in the conversation of the other patients. At the time when the noise of the speaking was sufficient to prevent her

hearing, I directed, at the distance of six feet, a rod towards her stomach which I found very sensitive. At the end of three minutes she seemed very uneasy and agitated; she turned round on her chair and asserted that some one behind or by the side of her had magnetised her, although I had taken the precaution to remove all those who might have made the experiment doubtful. Fifteen minutes later, taking advantage of the same conditions, I renewed the experiment which gave exactly the same result. The slightest magnetic movements gave another patient so acute an impression, that several times when a finger was moved six inches from her back without her knowledge, she was seized with convulsive movements and made repeated jumps betraying the action exercised on her, and which lasted as long as the action. If we moved a finger over the head of one of the patients or down the length of his back without touching him, doing this, even at a distance, he would often jump quickly or turn his head to see who was behind him. These facts are not very numerous or varied, because I have only quoted those which have been well established and of which I have no doubt. They are sufficient to compel the admission of the possibility or existence of a fluid or force which is exercised by man on man and which sometimes produces a perceptible effect.¹

We find the same results related in Dr. Husson's report to the Academy of Medicine (1838). They were not, it is true, produced with the same constancy in all subjects; the intercurrence of suggestion which was always possible with the majority of them, sufficed to explain the deviations. He reported, however, that one of the subjects experimented upon always had convulsive movements on the approach of the fingers whether his eyes were bandaged or not, and that these movements were more marked when a metallic rod was directed towards the parts experimented upon.

¹ Extract from M. de Jussieu's report on animal magnetism,

The following illustration is taken from the same report:—

M. du Potet, after placing a bandage over the eyes of the somnambulist, on several occasions pointed his fingers towards him at a distance of about two feet. Immediately there was manifested in the hands and arms towards which the action was directed a violent contraction. M. du Potet having brought his feet near to those of M. Petit (the subject) but without contact, the latter quickly withdrew his. He complained of experiencing in the limbs towards which the action was directed a sharp pain and burning heat. M. Bourdois (the President of the Commission) tried to produce the same effects. He also obtained them, but with less promptitude and in a lesser degree.

In his "Note on some Somnambulistic Phenomena," M. Pierre Janet indicated in passing, and without appearing to attach any importance to it, the phenomenon of magnetic attraction, doubtless because in the conditions under which he observed it, he could only see in it the effect of hyperesthesia of touch. "In order to provoke general contracture, it is sufficient for the magnetiser to place his open hand a short distance in front of the body. Certain tremblings are noticed first of all, then the body rises and follows the hand as though it were really attracted by it."

In 1887, Dr. Baréty published a large work, *Le magnétisme animal étudié sous le nom de force neurique*, which contained a series of experiments destined to prove the thesis which we here maintain, and which is certainly the greatest attempt which has been made from the scientific point of view to establish the reality of animal magnetism. Whence comes it, however, that Dr. Baréty's work has not succeeded in overcoming the incredulity or indifference of savants in the same way as Dr. Charcot's lessons

have done in the cases of hypnotism and Bernheim's works for suggestion ? The principal cause of this lack of success is doubtless due to age-long prejudice on the part of the great majority of scientists against even the bare idea of animal magnetism; but the manner in which Dr. Baréty has presented his experiments and conclusions is not, perhaps, unconnected with the failure.

On the one hand, in fact, the author of *Magnétisme animal étudié sous le nom de force neurique* does not seem sufficiently impressed with the absolute necessity of eliminating, every time he experimented, even the shadow of suggestion; at least he does not appear to have taken all the precautions necessary in this respect.

But every experiment in magnetism in which we have not carefully prevented and excluded all suggestion, not only under the ordinary form, but even under the form of auto-suggestion, has no value as conclusive proof.

On the other hand, we think he was wrong immediately to generalise and transform the facts which he had observed with only one subject (or some such number) into laws, as such facts in all probability when observed in other subjects, will not be reproduced in the same manner.

The time has not yet come to theorise, systematise, or explain: a more urgent duty is imposed upon us—to observe and to prove.

VI

We dare scarcely hope for this new attempt a better issue, and we fully expect to meet with opposition. Rather than admit in the human organism the existence of an unknown force or at least of an unknown modality of force, recourse will be had to every supposition, often

even without taking the trouble to examine if they are in harmony with the facts.

It will not, therefore, be idle to review all those we can think of and reduce them to their true value.

Shall we attribute all the effects which I have described to chance, that is to say, to a series of coincidences ? We must then suppose that, as the result of whatsoever causes, some movements or sensations were produced in subjects in the precise regions and at the same moment when my hand was directed towards these parts. But chance would never have such constant and precise results.

Simulation may next be suggested. All subjects it will be said are hysterical and tend to simulate. That is the common objection so often brought against even hypnotism and suggestion. But from the first, with the exception of Jean M. who, in fact, showed signs of hysteria, no one has the right to regard the other subjects as hysterical. The sleeping children on whom I experimented, Julio M. who a quarter of an hour before meeting me had no idea of such phenomena, why and how should they have simulated ? And though Gustave P. and Jean M. might have had the desire to cheat me, I ask how it could have been possible. With a bandage over the eyes sufficiently thick to intercept all light, would it have been an easy matter to guess if it was the right or the left hand that was pointed towards the person at a distance of over four inches, and if it was directed towards the right or the left, towards the forehead, elbow or knee ? I have tried the experiment several times with persons devoid of magnetic sensibility, and, in spite of all their efforts, they have never been able to discern what gesture I made or did not make in front of them.

Should we be more fortunate in invoking *hyperesthesia* of hearing or touch ? The subject, shall we say, thanks to the excessive sensibility which hypnosis develops, hears

the slightest movements made, perceives the displacements of the air produced by gestures, feels the heat radiated by the hands.

It is forgotten that except in a very small number of cases, I have always experimented with subjects in a waking state; in particular all the experiments made with Gustave P. were in a state of waking. Julio M. had never been hypnotised; I contented myself by applying my hands for a few seconds, according to Moutin's method, to his shoulder-blades and making some passes the length of his arms, accompanied however by suggestions quite foreign to the phenomena of magnetic attraction. It is therefore quite arbitrary to attribute to these subjects a hyperesthesia, which, if it had existed, would certainly have been manifested at the same time by a number of other signs. But their auditive or tactile sensibility, when directly proved, always acted during the experiments as the normal sensibility of a person awake. Moreover, in admitting a heightened sensibility to touch, we are forced to own that this sense can perceive nothing if there is not an external cause, feeble though we may suppose it, in order to excite it. What then caused Gustave P., after an interval of half a minute, to perceive the action of my right hand as an attractive force and my left hand as a pricking agent?

Shall we say that it was the heat radiating from the hand? It was a strange hyperesthesia which enabled him at a distance of over four inches to perceive a difference of temperature between the right and left hands of a person and to interpret this difference by two such utterly dissimilar sensations as that of attraction and of pricking—yet more when the two hands were joined, separately to perceive their different temperatures—still more even when it was perceived after transmission by a wire of over two yards in length!

A last resort remains: *Suggestion*. Professor Bernheim has quite succeeded in convincing his master, Dr. Liébault, that the imposition of hands and magnetised water cure children at the breast by suggestion alone.¹ It is not necessary to despair of proving that suggestion is sufficient to account for all the results claimed for magnetism.

You have, it will be said to us, made your subjects fully understand what was expected from them, not perhaps expressly, but by hints. But if I say to a subject, or if I allow him to suppose, that I wish to attract his right arm, it is certain that his right arm will be attracted: there is no occasion to place my arm at a distance from him and emit an imaginary fluid. We may make the experiment as often as we wish.

If the account of our experiments is re-read, it will be seen that we had but one anxiety, to act without opening our lips, with as little noise as possible, in order to preclude all possibility of suggestion. If we used suggestion in experiments of control, it was not in order to forewarn the subject of the result we expected, but, on the contrary, to turn away his attention, to put him off the track, or, in a word, to oppose suggestion to magnetism; and in spite of all these precautions the magnetic effects were produced. We have, therefore, the right to say that suggestion was in no way the cause. To say after that, that we can produce in a large number of subjects the same effects solely by the use of suggestion is but to force an open door: who denies it? That is not the question. If I can purge a patient without castor oil by suggestion, does it follow that I cannot purge him without suggestion by castor oil? In the same way the possibility of attracting a subject without magnetism by suggestion does not exclude the possibility of attracting him without suggestion by magnetism. The whole of the argument generally

¹ See Liébault, *Du Zoomagnétisme et Thérapeutique suggestive*.

used by the exclusive partisans of suggestion is one of the choicest specimens of sophism called by logicians *ignoratio elenchi*, that is to say, ignoring the point to be proved.

But if the suggestion fails under its ordinary form, will it not succeed under the more complex and obscure form, whether of *auto-suggestion* or *mental suggestion*? The subject, shall we say, is auto-suggestionised; he imagines that you attract him, that you prick him, etc., and he himself realises the imagined effect.

Why, we ask in turn, has he this imagination, at the moment when we place our right and left hands and at the exact part of the body where the hands are placed? No other reply is possible than that which we have already mentioned: chance, simulation, suggestion from the operator himself; unless we admit a real objective influence, or what comes to the same thing, animal magnetism.

May we not suppose, however, that it is still suggestion that acts, but a suggestion transmitted from the operator to the subject without words or signs, solely by the force of thought and will—a *mental suggestion*? The hand really produced no effect, emitted no radiation, but it is sufficient that we wish or believe we exercise an action on the subject in order that our will and belief may penetrate to him, be imposed on his brain and realised in his organism.

I do not know if mental suggestion exists; for my part I have never succeeded in provoking this phenomenon except under the form of sending to sleep and awaking provoked by a simple mental command;¹ but if mental suggestion exists it is not a phenomenon of suggestion, it is a phenomenon of magnetism. Do not let us be deceived by words; the pretended mental suggestion, a very unfortunate name, has nothing in common with

¹ See Chapter I.

suggestion properly so called. Thus the School of Nancy has not been deceived; it rejects the first because it only admits the second. If I say to a person "rise" and she rises in spite of her will, the something special in this fact which constitutes the suggestion, is not that the person has heard and understood my command, that was only something quite ordinary, but that she was not able to prevent herself from obeying. If without saying anything I desire a person to rise; whether she rises or remains seated, the something special in this fact, that which constitutes what is called mental suggestion, is not that the person obeyed my order, because that is suggestion pure and simple; but it is that she had heard and understood this order which I had given without uttering a word or making a sign. That she did not obey me, is of no importance; the phenomenon exists, it is complete by this alone that the transmission of thought or will is made from one brain to another. But what connection has this transmission with ordinary suggestion, which consists solely in the influence of an idea of the subject (whence indeed it comes) on the organism of the subject? The whole mystery resides in this influence that one brain exercises at a distance on another. But who does not see that this influence is just a particular instance of magnetic influence in general? Instead of supposing that this influence radiates from all parts of a living body, we suppose that it radiates exclusively from one brain to another. If, therefore, the phenomena which I have described can be explained by mental suggestion, that amounts to saying that in the main they can be explained by animal magnetism, because I imagine that we do not attribute to thought and will the mystical property of communicating themselves from one mind to another without any physical connection between the brains in which they have their material conditions.

But is it true that the action of one man on another may always and exclusively be a cerebral action, the result and sign of will and thought ? I do not, in any case, see how this hypothesis will account for the majority of the facts which I have expounded. The first time I attracted Gustave P.'s elbow, neither he nor I were thinking at all of any such result ; it was produced unconsciously to each of us only by the turning of my hand, the fingers being pointed in the direction of his elbow. Similarly, when I put my left hand forward I did not in any way expect to produce a pricking. When I put my two hands forward I expected that the effects would be reciprocally neutralised, not to see them placed in juxtaposition. When after an absence of eight months I repeated all these experiments, I expected and desired to obtain attraction with the right hand, pricking with the left, etc. ; we have seen that, in spite of my thought and desire, these results were no longer realised. Moreover, I several times tried to transmit to this subject definite thoughts and wishes ; except sleeping and waking, which I provoked several times mentally without his knowledge and unexpectedly, I never obtained very satisfactory results.

Only one conclusion, therefore, remains possible, the same that Cuvier formulated in his *Leçons d'Anatomie* (Vol. II, p. 107).

It is very difficult in experiments which have for their object the testing of the action that the nervous systems of two individuals may exercise one upon another, to distinguish the effect of the imagination of the person with whom the experiment is made from the physical effect produced by the person carrying out the experiment. Nevertheless, the results obtained from persons already unconscious before the experiment commenced, which have taken place in other persons after the operation had

made them lose consciousness, and those which animals present *do not leave room for doubt* that the proximity of two animated bodies through certain positions and movements may have a real effect, independent of the imagination of one of them. It appears quite clearly demonstrated that these effects are due to some *communication which is established between their nervous systems.*

Shall we then be refused the right to admit the existence of a natural force, still unknown but certainly analogous to the electrical and magnetic forces, radiated by the nervous system, under pretext that this force has not its place in our scientific theories ? We reply with Laplace, "that it is scarcely philosophical to deny the existence of magnetic phenomena for the sole reason that they are inexplicable in the present state of our knowledge ?" (*Calcul des probabilités*, p. 348.) It is not for the facts to accommodate themselves to science, it is for science to accommodate itself to the facts. If animal magnetism exists, once well and duly verified, it will take its place naturally in science as hypnotism and suggestion have already done, in spite of their apparent improbability.

Magnetism, in point of fact, does not in any way seek to suppress or absorb suggestion and hypnotism ; it only seeks to be admitted with them and alongside of them. Without doubt systematic minds would scarcely be satisfied with this solution ; at all costs they would want to include all the facts in one formula, even if it should be necessary to efface their essential differences. However, we are not forbidden to hope that we shall one day succeed in discovering the natural unity of these three orders of phenomena, as we have begun to discover the unity of the phenomena of heat, light and electricity. They resemble each other too much, accompany each other too often, too readily follow in the track of one

another not to betray in all these connections an unknown relationship. But at the present point of our knowledge and research, we shall gain nothing and lose much by trying to identify them. They are, perhaps, the effects of one and the same cause; but these effects most certainly are produced in differing conditions and according to different laws.

But if it is once proved scientifically that magnetism exists, it will always be necessary thereafter to have regard to its possible intervention in the whole of the phenomena hitherto exclusively attributed by science to hypnotism and particularly to suggestion. Just as we have compelled ourselves to eliminate suggestion from all our experiments with magnetism, we ought to compel ourselves to eliminate magnetism from all experiments with suggestion. The School of Nancy has rightly said that the ancient magnetisers never ceased to suggest unconsciously; they must expect it to be said of them that they have often used magnetism unawares.¹

It may be that the gaze, contact, passes, personality of the operator, etc., only act on certain subjects by a purely suggestive influence, but it may also be that suggestive influence is added to or substituted for a magnetic influence on certain others. From the moment that the two agents, one as real as the other, are susceptible of being brought into play simultaneously and combining their actions, no one has the right to attribute *a priori* the effects produced to either of them to the exclusion of the other; only the experiments made expressly with this object enable the part played by magnetism and that of suggestion to be determined in each case.

¹ See Liébault, *Thérapeutique suggestive*.

VII

Nevertheless, in affirming the existence of the magnetic force, we do not ask for our word to be believed; what we ask, on the contrary, is that pains should be taken to verify the hypothesis of animal magnetism, as any other scientific hypothesis may be verified, that is to say, that it should be submitted to the test of experiment.

Hypothesis,¹ in fact, as we have elsewhere shown, may appear in science under two forms, which have hitherto been more or less confounded, and which Claude Bernard was the first to distinguish, viz. *theoretical* and *experimental* hypothesis.

The first, very wide and general in character, in a great measure constructed *a priori*, has for its object the explanation of a whole multitude of phenomena which cannot by any means be co-ordinated into a system; they confirm rather than verify, by showing that this system introduces a connection and unity in the whole. It appears in science, under its own name and with its own characteristics, either at the commencement, among the principles (such as the hypothesis of atoms), or at the end, among the conclusions (such as the hypothesis of ether); and it is of hypothesis thus understood that Newton said: *hypotheses non fingo*.

The second, which is very restricted, very special, and suggested by observation, has for its object the immediate creation of one or several experiments, the conditions of which it rigorously determines; it can and ought, therefore, to be immediately confirmed, and, consequently, we shall search in vain for it in a science once constituted, at least, under the name of hypothesis, because if it has been

¹ See article on *Hypothèse* in the *Grand Encyclopédie*. See also "Appendix on Hypothesis" at the end of this chapter.

verified it will take its place under the name of truth or law; and in the opposite case it disappears without leaving any trace. The history of science alone will preserve any record of it. It is hypothesis as thus understood which, according to Claude Bernard, is the great starting-point of the natural sciences.

Hitherto animal magnetism has only been a theoretical hypothesis. It is necessary for it to become an experimental hypothesis. We have examined it; it is the facts which have suggested it to us, or, we may say rather, imposed it upon us, and by no means *a priori* speculations. Our first care has not been to develop it, to construct it in all its details, to form of it a comprehensive and elaborated theory, but simply to make use of it as a directing idea, such as will enable us to institute experiments and discover the facts which will verify it. This course, it is true, appears very slow, but it is the only sure one. Like certain pilgrims of the Middle Ages, science only progresses by taking three steps forward and two backward. Starting from facts and returning to facts by way of hypothesis is the whole secret of the experimental method.

Precisely because it always remains in contact with experiment, this method, may, without fear, give free scope to the imagination. Certain savants would try to limit the whole of science to the observation of facts alone; it would seem that they are afraid to think. But facts are only of value to those who can interpret them aright. Nature always recompenses investigators magnificently who have faith in her logic. When by a sufficient number of indications she herself suggests to us an hypothesis, let us be sure that the consequences will always be verified by her sooner or later, although they may appear to ignorant or prejudiced minds the least probable. Let him that may be confronted with such

an hypothesis not therefore hesitate boldly to deduce the consequences which it entails and to draw up a scheme for experiments which will verify them one by one; for this is the only sure road to discoveries.

We cannot give here a programme for research; we can only indicate two directions in which it may be fruitful.

First of all, it is exceedingly probable that the nervous systems of persons sensitive to a magnetic agent do not differ in character from those of other persons; this sensitiveness must depend on a certain condition of the nervous substance, which, even among subjects, varies with different circumstances, principally with use and custom. Must we be forbidden to suppose that certain substances or practices, still unknown, may produce this condition in all nervous systems and develop in them, at least for a time, magnetic sensibility? When the *developer* of magnetic sensibility is discovered, we shall be able to reproduce at will, in all men, the phenomena which we have hitherto observed and experimented with in only a very small number; but especially we shall also reproduce them in animals, which will singularly facilitate the experimental study of the properties of the magnetic force.

On the other hand, it is possible that this force does not meet in nature any other reactive capable of disclosing its action than a nervous system in a certain and special condition. But the contrary is also possible and even probable. We ought therefore to see if it is not possible to construct some apparatus, magnetoscope or magnetometer, which would be for this force what the thermometer is for heat, the electroscope for static electricity, and the galvanometer for dynamic electricity, etc.¹

So long as these two forms of research have not resulted

¹ See the *Annals of Psychical Science*, October 1905, "Modifications in the Nervous Force."

in definite conclusions, we ought to content ourselves with studying magnetic force by experimenting on subjects. The number is doubtless much larger than we believe, and as experiments in magnetic attraction may very well succeed in a waking state (as the case of Julio M. proved) it would, perhaps, be easier to obtain their co-operation for these rather than for hypnotic experiments.

But the absolutely essential condition for such experiments to be of value, we cannot too often repeat, is that suggestion must be rigorously excluded. To this end the eyes of the subject should be hermetically bandaged ; we ought to abstain from saying a word ; if the operators—who ought to be very few in number—have anything to communicate to one another, let it be done in writing ; they should make it their special aim to make as little noise as possible. The experiments should be conducted, not by improvising them during the séances, but according to a programme pre-arranged in every detail. The results may then be noted as soon as they occur by one of the sitters.

In order to bring these researches to a satisfactory conclusion, one investigator only is not sufficient ; it is necessary to have the continuous co-operation for some time of a circle of physicists, physiologists and philosophers.¹ The field open to us in this direction is infinite in extent ; there is a whole region of nature, still unknown, to explore. Will savants still persist in passing it by, even turning away their heads to avoid seeing it ? Do they think that the dignity of science commands them systematically to ignore the question under pain of being compelled to confess one day that the ancient magnetisers, Mesmer, Puységur, Deleuze, Du Potet, Lafontaine and many others, deserved a better reception than indifference and

¹ It was this thought which inspired, at least at the commencement, the founders of the Institut Psychologique général, whose offices are now at 11, Rue de Condé in Paris.

contempt ? The remark made by Nicol holds good, alas ! for all time : "There are some who have no other reason for rejecting certain opinions than this amusing argument. If that were so, I should not be a competent man : therefore it is not the case." That is the principal reason which has for long caused certain very useful remedies and some well-ascertained experiments to be rejected because those who had not till then recognised their value were unwilling to admit their previous ignorance.¹

The truth of animal magnetism is, however, very important ; it has theoretical and practical consequences which are sufficiently important to be worth the trouble of making sure of them. We shall not assure ourselves if we do not renounce the old errors of opposing arguments or ridicule to facts ; of insinuating against those who relate them suspicions of credulity or imposture ; of abstaining from making any of the experiments indicated, but demanding that they shall be improvised at a fixed day and hour before an academic commission, in a great measure prejudiced and hostile ; or of making the experiments, taking no account of the necessary conditions, hastily declaring they do not succeed, and concluding that the question is buried for ever. Could the science of electricity ever have been constituted if such treatment had been inflicted on those who initiated it ?

We may remember in what terms the lamented Professor Georges Pouchet expressed himself in *Le Temps* of August 12, 1893, on the subject of thought transmission, which is, in point of fact, only one particular instance of animal magnetism :—

"To demonstrate that a brain, by a kind of gravitation, acts at a distance on another brain, as one magnet on another magnet, the sun on the planets, the earth on a

¹ *Port-Royal Logic*, Vol. III, Chapter XX.

falling body, is to arrive at the discovery of an influence, a nervous vibration, which is propagated without a material conductor !

“ The wonder is that those who believe either little or much in anything of this character do not even seem to be aware of the importance, the interest, the novelty which is therein contained, and of the revolution which would be made in science for the world of to-morrow. Find us that, my friends; reveal that to us, and your name will be higher in immortality than that of Newton, and I tell you that the Berthelots and Pasteurs will take off their hats to you.”

No, the investigators of whom we speak are not so simple as we may suppose; they know very well the price of the discovery which they pursue and it is for that reason that they do not allow themselves to be discouraged either by difficulties or sarcasms. But they would willingly exchange the glory and honour which they are ironically promised, if they could only persuade science finally to do justice to their efforts, to consent to recognise and study a truth so important for the human mind.

APPENDIX TO CHAPTER VII

HYPOTHESIS

IN a very general sense, every supposition, every conjecture, more or less well-founded is of the nature of an hypothesis. In the language of mathematicians, we designate under the name of hypothesis the first part of a theorem, that which logicians call subject or antecedent, in opposition to the second (attribute or consequent), which is designated by the name of consequence. For example *if two straight lines are perpendicular to a third* (hypothesis) *they are parallel* (consequence). But the word "hypothesis" belongs particularly to the vocabulary of natural science, and is regarded as one of the most important processes, that by which the scientist imagines beforehand and treats as already known the truth for which he seeks. It is expedient in this respect to distinguish between two kinds of hypotheses which logicians have often confounded but which, however, differ in many connections, although we can show that they are imperceptibly related one to the other—*experimental* and *theoretical* hypotheses.

"The first has been specially studied by Claude Bernard, in his admirable *Introduction d l'étude de la médecine expérimentale*. It is interpolated in the series of operations of method between observation and experiment; suggested by observation, it renders possible the experiment which tests it. Its great function is directing research. "All experimental initiative," said Claude Bernard, "is in the idea; because it is that which provokes the experiment. Reason or argument only serve to deduce the consequences of this idea and submit them to experiment. An anticipated idea or an hypothesis is, therefore, the necessary starting-point of all experimental reasoning. Without that we can undertake no investiga-

tion nor ascertain anything; we can only accumulate sterile observations; if we experiment without a preconceived idea, we proceed at random." Such an hypothesis is necessarily special and precise; it has to do with the probable cause or effect of such determined phenomena as the savant has just observed. More often also, it is the observation itself which suggests it. "An experimental hypothesis," said Claude Bernard, "ought always to be founded on an anterior observation. Nevertheless, there are no rules to submit which will give birth in the brain, in connection with a given observation, to a proper and fruitful idea which will prove for the experimenter a kind of intuitive anticipation towards a fortunate research. The idea once put forward, we can only say in what way it should be submitted to definite precepts and logical and precise rules. But its appearance has been quite spontaneous and its nature quite individual. It is a particular sentiment, a *quid proprium* which constitutes the originality or genius of its inventor." Such is the importance of this process that Claude Bernard has not hesitated to make it the principle even of scientific progress: "The idea is the seed; the method is the sun which gives the conditions for development and growth and for giving the best fruits according to its nature. But just as only that which has been sown in the ground will grow, so by the experimental method only the ideas submitted to it will be developed. *Method by itself engenders nothing.*"

Finally, the experimental hypothesis belongs to science in course of construction: it is absent from science once constituted; because either it has been verified by experiment and is transformed into law or else the experiment has disproved it and it has been replaced by another hypothesis, and so on until the final discovery of the law. Thus we may say that nearly all present scientific laws have first been hypotheses. This immediate disappearance of experimental hypothesis at the same time as science passes, as scholars say, from the *in fieri* to the *in factu*, is doubtless the reason why the majority of logicians before Claude Bernard ignored its existence.

Theoretical hypothesis has for its aim the co-ordination

and integration of truths already acquired. It is placed at the end of the series of the operations of method, after experimentation and induction. Its function is no longer to direct research but to explain results. The mind, in fact, having discovered a certain number of laws, feels the necessity of connecting them together, and as they do not seem capable of being deduced one from another, or of being reduced to some more general law, it completes the experiment and the argument in some way by imagination and constructs an hypothesis where all these laws are found included and explained. Such hypotheses are necessarily very general and they are such, for example, as the hypothesis of ether as the vehicle of heat, light and electricity in physics; the atomic hypothesis in chemistry; the hypothesis of Laplace in astronomy; the hypotheses of Lamarek and Darwin in natural history, etc., etc. They cannot be directly verified by experiment; but they become all the more probable when they include a very large number of facts and laws to which they give a more simple and coherent explanation. Finally they take their place in science, parallel with and, so to speak, on the margin of truths definitely acquired: also they have attracted the attention of logicians at all times who have sometimes exaggerated and sometimes under-estimated their importance, and it was to them that Newton alluded when he wrote the well-known phrase: *hypotheses non fingo*. The rules of hypothesis given in all treatises on logic (hypothesis ought not to contradict any facts already known; ought to explain the majority of these facts and enable others to be discovered; ought to be as simple as possible and conformable to analogy, etc.) refer almost uniquely to theoretical hypothesis. Let us remark, however, that experimental hypothesis is often, and particularly in proportion as science is developed, only a special instance of some theoretical hypothesis which is thus found indirectly submitted to the test of experiment.

It may also be necessary to distinguish two kinds of theoretical hypotheses; those really *explanatory*, claiming to give the real and (partially at least) definite explanation of a certain collection of facts; such is the hypothesis of undulations of the ether in optics, that of the transformation

of species by selection in natural history; and the others simply *representative*, permitting the introduction into a collection of facts, the cause of which is still unknown, a provisional, and more or less artificial, order which will facilitate the exposition: they are often only ancient explanatory hypotheses, the insufficiency of which has been recognised, but which we have preserved because of their convenience: such are the hypothesis of emission in optics, that of the two fluids in electricity, etc.

Under all its forms, hypothesis testifies to the insufficiency of pure empiricism and the necessary part played by the regulating and creative faculties of the mind in natural sciences.

CHAPTER VIII

A NEW METHOD OF EXPERIMENT IN HYPNOLOGY

THE observations and reflections in the previous chapter have been, for the author of this work, the starting-point of a series of new researches, the results of which it would take too long to make known in detail.

I am here restricted to a brief exposition of the rules of the new method of experiment employed in these researches, and then to summarising, in a few propositions, the most interesting facts which the employment of this method has enabled me to discover. I shall, however, abstain from all discussion and all attempts at explanation, reserving the right to deal elsewhere with this part of the subject.¹

The following are, first of all, the essential rules of my method :—

1. Always to experiment exclusively with persons in a waking state. Doubtless the majority of the subjects with whom I have experimented have already been hypnotised, more or less frequently, either by other operators or by myself; and I evidently benefited, for my experiments, from the greater impressibility which these previous hypnotic experiences had developed in their nervous systems. But that is not an indispensable condition and I have been able to experiment quite as well with persons who have never been hypnotised in their lives. In any case, in the course of the special

¹ See the last chapter of the present work: "The conductivity of psychic force."

experiments, not only have I not tried to do, but I have carefully avoided doing anything which might send the subjects to sleep or cause any alteration in their normal state.

2. To put the subjects from the beginning, and throughout the experiments, in such a condition that it is absolutely impossible for them to see what is happening around them by hermetically bandaging their eyes. For this purpose I made a bandage of black cloth, sufficiently thick to intercept the light, which covered not only the front of their eyes, but which also included the nose, and by means of tapes enabled me to fasten the lower end of the bandage over the top of the lips. As a result, certainly, the subject is inconvenienced by only being able to breathe through the mouth, but he quickly accustoms himself to that, and, moreover, his absolute blindness is the indispensable condition for the validity of these experiments.

3. To observe, before and during the sitting, the most rigorous silence, and to impose this law on the assistants and spectators. The latter must understand of themselves the drift of the experiments they witness and must not ask for any explanation nor must any explanation be given to them. If it is necessary for the operator to communicate with his assistants it must always and only be done by means of writing. The subject alone is to be allowed to speak without being spoken to, in order to express what he feels every time he experiences any sensation. All the objects and apparatus which the experimenter may use during the experiment are not brought into the room until the subject's eyes have been bandaged and no mention whatever is made of them.

4. To abstain scrupulously from all contact with the subject. The subject's sense of touch must not take the place of the senses of sight and hearing and thus enable him to suspect what is taking place around him.

5. Finally, to seek to arrange the experiments in such a way that the operator himself, at least on the first occasion, has no foreknowledge of the result and may only gather the information when the experiment is at an end.

As we see, all these precautions have for their aim the complete isolation of the subject from the physical and mental point of view. It is necessary for him to be as ignorant of the nature of the experiments made with him, as our readers are themselves at this moment, so that he may react as much as possible in the same manner as a physical instrument.

These being the five rules of this new method of experiment, the fundamental process which constitutes it may be thus defined. Place the hand in conditions which may vary infinitely, at distances of two, four, six or more inches, and keep it steady, the fingers outstretched in front of any part of the subject's body, to right or left, in front or behind, shoulders, fore-arm, elbow, wrist, hand, knee, foot, epigastrium, etc.

And here, summarised in a few propositions, are a few interesting facts that this method has enabled me to discover and which are probably slight in comparison with those which remain still to be discovered.

1. Everything happens as if the human organism had emitted in a normal manner, at least in certain individuals, an influence of an unknown character, capable of acting at a distance on the organism of certain other individuals.

2. Everything happens as though the majority of individuals being good conductors of this influence, it crossed, more or less rapidly, the whole of their bodies and became lost in the external surroundings without producing any sensible results, and as if, on the contrary, certain other individuals, those whom we call subjects, are bad conductors of this influence, accumulating and

warehousing it themselves for a longer or shorter time, in the parts of the body where it may be directed, in such a way as to produce more or less marked effects.

3. The nature of these results varies with different subjects; but, on the one hand, it always produces some results in all those subjects sufficiently impressionable, and, on the other hand, the nature of the results produced is constant in each subject.

4. The time necessary for the production of an effect varies according to the operators, subjects and circumstances; in the experiments I made the average appeared to be about thirty seconds.

5. The list of the effects observed by me up till now is the following: (1) analgesia, then anesthesia, first superficial, then profound in the parts covered. In order to verify this kind of effect a complementary method is indispensable, the description of which I will give presently; (2) contraction, more or less abrupt and violent, of the muscular system in the parts covered. This effect is principally observed in the tricep muscles, when the action is directed towards the knee. Most frequently, however, the contractions are not accompanied by any conscious sensation on the part of the subject; (3) tendency to contracture of the parts covered; this effect is particularly produced when the action is prolonged; (4) attractive movements by which the part covered is gradually and irresistibly drawn by the operator's hand. These movements are produced spontaneously in certain subjects, even when the operator's hand remains steady; in some subjects they are only produced when the operator slowly moves his hand, and there is then established a quasi-mathematical correspondence between his movements and those of the subject; (5) various sensations which the subject declares he experiences in the parts covered, the most common being the sensation of heat which may be as acute as burning, the

sensations of pricking, tingling and numbing. The subjects invariably liken these last three to electrical sensations. In addition, some parts of the body have, at least with certain subjects, their special mode of reaction; thus by acting on the epigastrium, increased difficulty in breathing is produced, which ends in a characteristic deep breath.

6. This unknown influence which is sent out from the human organism can be conducted to a distance by means of an iron or copper wire; it is sufficient for the operator to hold one of the ends in his hand and for the other end to be placed in front of some part of the subject's body.

7. In certain subjects, and perhaps also in certain operators and in conditions unknown to me, this influence is polarised in this sense, that the right hand constantly produces a certain effect, the left hand a different effect, and the effects are combined when the two hands are superposed, palm to palm. This polarity continues even when the influence is transmitted by a metallic conductor, according to whether the iron or copper wire is held in the right or left hand of the operator or the two hands joined together.

8. This influence is sent out naturally from the ends of the fingers, but it is also emitted in a diffused state, from all parts of the body. Thus, it is sufficient to roll around the arm, from the wrist to the elbow, an iron wire, and to adapt on the centre of this species of solenoid a point of the same metal to prove that the point placed in front of any part of the subject's body produces the same effects of anesthesia, attraction, pricking, etc., that the hand itself produces. Similarly by rolling round the hand an iron wire ending on a level with the five fingers, we notably increase the rapidity and intensity of the effects.

9. Glass appears, on the contrary, to be a bad conductor

for this influence, that is to say, an insulator. That is at least the conclusion to which the following facts have led me.

First of all, I took a glass rod, nineteen and a half inches in length, terminated in a point at one of its extremities. I rolled an iron wire round one half of the length of this rod, the point of the wire coinciding with the point of the glass; if then, taking the rod by the lower end where the glass was bare, I placed the point opposite to any part of the subject's body, no effect was produced, even after four or five minutes; now if I continued to roll the wire around the second half of the rod in such a way that the metallic conductor might be in contact with the inside of my hand, it was sufficient for me to present the end of the rod in order to obtain in less than a few seconds, anesthesia of the part covered. On the other hand, on twice making the same experiment of the direct presentation of the hand, first myself and the subject isolated from the floor at the same time, by means of glass, and then in communication with the floor, I always observed when we were isolated, an acceleration in the production of the results, and in certain cases, this acceleration is one half of the time necessary when the communication is established. However, as these last experiments were only made with one subject, I mention the isolating property of the glass with more reserve than the conducting property of the iron and copper, these having been verified on several occasions with different subjects.

10. All individuals do not possess, at least not to a degree sufficient for the effects to be appreciable, the faculty of sending out this influence of an unknown nature which appears to be the determining cause of the whole of this class of phenomena.

11. However, if an individual destitute of this faculty comes in contact with another individual who possesses

it, he can, in turn, and for as long as the contact lasts, become capable of exercising this influence.

12. By repeating and prolonging the contact, an individual possessing this faculty may communicate it, in a more or less durable manner to another individual who is destitute of it, in such a way that the last can, in his turn, act personally for a longer or shorter time and even transmit his influence across the body of a third individual incapable of exercising any action by himself.

These twelve propositions faithfully summarise the principal facts which I have hitherto been able to establish by scrupulously observing the rules of the experimental method which I prescribed to myself, and which I complete by indicating the process which I employ to verify the state of sensibility of the subject in the course of the experiments.

Let us suppose that the part of the subject's body covered at a distance by the operator's hand be the patella of the left knee. Some one present strikes successively, with a point and in a certain order, various parts of the subject's body, and sometimes the part covered; the subject mentions out loud the contacts felt; if he remains constantly mute when the contact is made on the patella of the left knee, we may conclude that this part is in a state of anesthesia, and we may assure ourselves by pinchings and prickings of the extent and depth of the anesthesia thus produced.

It is not my business to emphasise the importance of all these facts from the point of view of hypnology, physiological psychology, perhaps even of general physiology. I merely express the wish that as many experimenters as possible would take the trouble to verify them in their turn, as I am certain that they would succeed as I have done, providing that they agree to observe these two indispensable conditions; in the first place, rigorously to

conform to all the rules of the method which I have indicated ; in the second place, if the first results are negative, not to be in a hurry to conclude that the facts reported here are delusions or imaginary, but to have the patience to experiment with a fair number of subjects either personally or with the assistance of other operators.¹

¹ The following is the manner this communication, which was published for the first time in the *Revue de l'hypnotisme*, was appreciated in the *Année psychologique* for 1891. "The author draws up the programme, indicates the results *en bloc*, but does not give the formulæry of his experiments. It would be first of all necessary to ascertain if a skilful subject could not perceive or divine the movements of the experimenter. I have always thought the collaboration of a conjurer necessary to detect these causes of error."²

CHAPTER IX

SUGGESTION AND MESMERISM

WHEN Mesmer explained the strange phenomena which were produced by his touches, passes and his well-known *baquet* and attributed them to a fluid of the same nature as the fluid from the magnet, we know what formidable opposition this explanation encountered amongst all the savants of his time. Rather than admit it they preferred to deny the facts or to look upon them as unimportant.

Already, however, an explanation quite different from that of Mesmer's had arisen, to which the royal commissioners timidly alluded in their report, without suspecting that it would later become the principle of an altogether new theory and new art, the theory of suggestion and the art of psychotherapy.

This explanation attributes all the facts observed to the imagination of the subject, more or less excited and directed by the operator, most frequently without his having the intention of doing this and when in good faith he believes he is giving out an objective influence. It was definitely propounded by the Abbé Faria and his two disciples Dr. Bertrand and General Noiset, and put forward by them in very clear terms in opposition to the hypothesis of mesmerism and animal magnetism.

It had for the time been lost sight of, when Braid thought to find the explanation of the phenomena produced by the magnetisers and those which he produced

himself in a special condition of nervous and cerebral fatigue, in a numbness and exhaustion *sui generis* of the centres, induced by an excessive or prolonged tension of the senses and brain. Then a third doctrine was promulgated, that of hypnotism, which has, for some time, eclipsed the other two, particularly when it was adopted and professed by Professor Charcot and the whole Salpêtrière School. Charcot, however, thought that he had completed it by adding that this particular condition—the hypnotic condition—could only be provoked with neuropaths, or, more correctly, with hysterical subjects.

But since the School of Nancy has more and more superseded the School of La Salpêtrière in the methodical study of the whole of these phenomena and particularly in its employment in the healing of diseases, the views of Liébault and Bernheim have prevailed almost everywhere over those of Charcot. At present, all doctors and savants who are engaged in the study of this question are strongly inclined to think, with Bernheim, that "suggestion is the key to all the phenomena of hypnosis" or even that "there is no hypnotism, there is only suggestion."

"When Mesmer," says Professor Bernheim,¹ "after certain manipulations or passes, witnessed ecstasy, hallucinability, analgesia, therapeutic powers, etc., he believed them to belong to a new condition of the organism created by his manipulations and which he called the magnetic state.

"Braid replaced the ancient magnetism by hypnotism; by the fixed gaze on a brilliant point and the concentrated attention which created an artificial sleep in which suggestibility, hallucinability, etc., existed.

"Liébault replaced the hypnotism of Braid by suggestive sleep. It is only suggestion which produces sleep, which develops suggestibility, which effects the cure.

¹ *Revue de l'hypnotisme*, November 1897, p. 114.

"Finally, I think I have dissociated suggestion from provoked artificial sleep, either suggestive or Braidic, and shown that the phenomena known as hypnotic are not the function of a particular state of the organism artificially created, but of a property of the brain more or less developed according to the subject's suggestibility.

"Imagine if the discovery, instead of being the outcome of the grosser practices of magnetism, or even those more delicate and scientific processes of hypnotism, had been made directly. It would have been established that a certain subject, acted upon by affirmation, could fall into catalepsy, contracture, analgesia, automatic docility, hallucinations, organic acts, sleep, etc.: we should have verified and directly studied the suggestibility of each as it existed or as it could be extended by various influences: suggestibility would have been discovered and the discovery would exist without being associated with the words hypnotism or magnetism. These words would have no occasion for existence. We might quite easily add that certain subjects, scarcely suggestible in the waking state, would become more so when the idea of sleep had been suggested to them; but that with very suggestible subjects such preliminary suggestion was by no means necessary. The idea of suggestibility would not be associated with that of hysteria and the doctrine of suggestion would not be obscured by the mysterious and anti-physiological idea which is attached to the words magnetism and hypnotism."

We have not to decide between the theories of Charcot and Bernheim, the School of Paris and the School of Nancy. Whatever Dr. Milne Bramwell may have said in his work which he has dedicated to James Braid, the originality of the Manchester surgeon consisted not in having discovered suggestion before Liébault (since it was Faria who made the first discovery), but in having discovered hypnotism, that is to say, a special condition of the nervous system susceptible of being provoked by physical

experiments, a condition characterised at least partially by an abnormal exaltation of suggestibility, but which is in itself quite independent of suggestion. Braidism, in our opinion, is and remains distinct from suggestionism, although they may nearly always be united practically in the majority of the phenomena which we have observed.

Only in the present condition of the question what is principally opposed to mesmerism is no longer hypnotism, as the majority of the partisans of animal magnetism imagine, but suggestion.

The problem must henceforth be stated in the following terms :—

May all the phenomena claimed to be magnetic, hypnotic or belonging to suggestion, be said to be due solely to ideas of the subjects, or to ideas communicated to them and to the convictions, emotions, etc., which these ideas determine in them, often without their knowledge ? Or, may they also have for their cause an objective occult influence, radiated at a distance by the operators, which exercises on the nervous system of the subjects an action comparable with that which the magnet exercises on iron ?

As for ourselves, we believe with Durand (de Gros), that suggestion and mesmerism are two distinct agents, equally real, independent one of the other, and which can take each other's place and counterfeit each other, as they can also combine for the production of common effects. We may therefore have suggestion without mesmerism, and mesmerism without suggestion ; better still, we can have a pseudo-mesmerism which is only suggestion and also a pseudo-suggestion which is only mesmerism ; finally, we can have at one and the same time and indivisibly, mesmerism and suggestion, suggestive mesmerism, or, if we prefer the term, mesmeric suggestion.

First of all, facts prove to us every moment that suggestion may exist without mesmerism. When without looking at a subject or touching him, I say, "Close your eyes; you cannot now open them," and he tries in vain to open them; and I add, "they will open of their own accord when I have counted up to seven," and the stated result is produced, it would seem clear that mesmerism has nothing to do with phenomena of this class and that they must be explained by suggestion alone.

But suggestion is not only independent of mesmerism, it can also in many cases take its place, or, more correctly, simulate all its effects.

The following, for example, is an experiment which I have often made with certain subjects. I place my open hand over the hand of a so-called magnetic subject; after a few moments he declares he feels a very strong impression of heat; this impression soon becomes intolerable and he asks me to remove my hand. I reply that I am not preventing him from withdrawing his, but, after a few efforts to do so, he protests that this is impossible. His hand, in fact, seems paralysed or contractured *in situ*. Nevertheless it moves, rises, goes down immediately I impart these movements to my own hand, as if an invisible wire connected one with the other. Should we not believe that we are in the presence of a real magnetic phenomenon? There is here, however, only a counterfeit of magnetism by suggestion, a pseudo-suggestive mesmerism.

In order to be convinced of this, it is sufficient to change only one of the conditions of the experiment, that which allows an operator to suggestionise or the subject to auto-suggestionise himself, without either one or the other knowing it. I say to the subject, as before, "Close your eyes; you can no longer open them," and the subject tries in vain to open his eyelids. If then I again place

my hand over his to make it rise, descend, move in all directions, no longer being able to see, he does not move. My hand so effective a moment ago, no longer exercises any influence.

Experiments of this character are the joy and triumph of the adversaries of magnetism, the exclusive partisans of suggestion. "You see clearly," Bernheim exclaimed, "that the fluid is nothing, and that suggestion is everything, since the pretended fluid only acts when the subject who is supposed to submit to its action is suggestionised or suggestionises himself!" We know that there are some cases of this kind which the royal commissioners originally quoted in opposition to Mesmer's assertions.

Yes, doubtless, but these cases do not stand alone; and there are others where, suggestion being eliminated, the magnetic effects continue quite as clear and quite as complete. These have been made with some really magnetic subjects and not with pseudo-magnetic or purely suggestionisable subjects.

Evidently the suggestionisable subjects with whom we can obtain the counterfeit of magnetism are more common than the really magnetic subjects, and that is why Bernheim and all the pure suggestionists act in good faith when they imagine that they have victoriously refuted mesmerism by experiments such as we have described, and which it is very easy to reproduce; but with a little patience we shall always succeed in finding these rarer subjects, sensitive not only to suggestion, but also to mesmerism.

For my part I have known at least five (and the total number of persons with whom I have experimented is not considerable) who possessed this remarkable property. I have particularly made numerous experiments with two of them under the most satisfactory conditions from the point of view of the rigour of the test. One, G. P.,

was a young electrical mechanic, to whom I referred in a communication made to the Society of Hypnology, published in the *Revue de l'hypnotisme* (November 1896), the other, L.V., was a young student of law and philosophy concerning whom Colonel de Rochas published in *Les annales des sciences psychiques* for May-June 1895, "The impressions of a magnetised subject related by himself."¹

When experimenting with them, I have always taken the precaution of bandaging the eyes hermetically, without saying a word or permitting any of the sitters to break the silence throughout the duration of the experiments. Further, in the majority of cases, I have allowed them to remain awake, doing nothing to modify the condition of their brain. I have simply said to them when they came to me : "Will you kindly allow me to put on this bandage; sit there, and when you think you feel anything, will you please tell me." In these conditions I have obtained the most varied and precise effects in all parts of their bodies corresponding with the position and movements of my own right hand or left, placed opposite the various parts.

May we not conclude that if suggestion sometimes counterfeits mesmerism, mesmerism may reciprocally counterfeit suggestion, and that there is, consequently, by the side of suggestive pseudo-mesmerism a pseudo-mesmeric suggestion ?

Thus Liébault and Bernheim, having tried in vain to cure a woman of pains in her stomach by direct suggestion, succeeded by means of passes, but that simply proved, in their opinion, that they had at last found the best method of suggestionising her. But it may very well have happened in this instance that they had had dealings with a counterfeit of suggestion by mesmerism.

¹ See Chapter X.

Similarly, the *Revue de l'hypnotisme* for February 1897, related a case of intestinal colic cured by suggestion in a waking state, which might very well have been a case of pseudo-mesmeric suggestion.

Every effort was made in vain to hypnotise the patient after the successive failure of all soothing medicaments; alleviation was obtained first of all, and then the cure by passes and the imposition of the right hand on the abdomen. During a séance of this latter character an erythematous patch appeared about as large as a five-shilling piece, and yet the operator's hands were not in contact with the abdominal wall. This erythema, which was of cherry colour, lasted as long as the séance; it appeared on three different occasions. The operation was conducted by MM. Mongour, physician at the Bordeaux hospitals, and Renault, medical student in the Marine, who had no hesitation in attributing all the results to suggestion. For our part we should be less certain.

In fact, as we have already said,¹ "if it is once scientifically proved that magnetism exists, in the future it will always be necessary to guard against its possible intervention in that combination of phenomena hitherto exclusively attributed by science to hypnotism and to suggestion. In the same way as we are forced to eliminate suggestion from all our experiments in magnetism, we ought to be compelled to eliminate magnetism from all our experiments with suggestion. The School of Nancy have rightly said that the ancient magnetisers never ceased to make suggestion unknown to themselves; they must expect that it will be said of them that they often used magnetism unawares. It may be that the look, contact, passes, personality of the operator, etc., only act on certain subjects by a purely suggestive influence; but it is possible that with others

¹ See Chapter VII.

the suggestive influence is even replaced by a certain magnetic influence. From the moment that these agents, one as real as the other, are always susceptible of being brought into play and combining their actions, no one has the right to attribute *a priori* the results produced to one of them to the exclusion of the other; only experiments made expressly to this end permit of determining in each case the part of magnetism and that of suggestion."

Can we not go further still and try to bring mesmerism and suggestion nearer to one another or both together in a common principle? In the chapter from which we have quoted we said with regard to this: "We are not prevented from hoping that we shall one day succeed in discovering the natural unity of these three orders of phenomena (mesmerism or animal magnetism, suggestion and Braidic hypnotism) as we begin to discover the natural unity of the phenomena of heat, light and electricity. They too much resemble each other, are too often in company, tread too frequently in each other's paths not to betray a secret relationship." It is true that we added: "but from the point of our knowledge and researches we shall gain nothing and lose much by trying to identify them. They are, perhaps, the effects of one and the same cause; but these effects are assuredly produced under different conditions and according to different laws." Only this reservation is explained by the essentially experimental point of view from which we exclusively consider this study.

But all that can be said from this standpoint is that mesmerism, like Braidism also, singularly facilitates the work of suggestion. It prepares, in some way, the ground in which suggestion may afterwards evolve. Make a point-blank suggestion to an individual, suggest to him that he cannot rise from the chair on which he is sitting: unless he has naturally an excessively

abnormal suggestibility, he will laugh in your face and will have no trouble in showing you the impotence of your suggestion; but begin by submitting him to a magnetic action, for example, make some passes over him, and, in spite of his incredulity and resistance, it will most likely happen that your suggestion is sufficient on this occasion to cause him to become immovable.

It is, therefore, allowable to suppose that if certain operators, such, for example, as Dr. Liébault, Professor Bernheim, etc., succeeded so easily in suggestionising so large a number of persons, it was not due solely to their great ability, to perfect experience of suggestive technique, but also because they possessed, unknown to themselves, an exceptional magnetic power.

That explains the great operative inequality of the various suggestionisers. In any case, our personal experience has taught us that the magnetic power is not equally distributed amongst all members of the human species. We may here be permitted to go into a few details.

Take a really magnetic or mesmeric subject, such as Gustave P. or Laurent V., of whom we have already spoken. We will suppose him to be in a state of waking, his eyes hermetically bandaged. It is agreed among all the persons present that the most absolute silence shall be preserved throughout the whole of the séance; if there is any observation to make it is to be done in writing. Under these conditions, ten operators of different ages and sex successively place their hands, as I did, opposite any part of the subject's body they may be pleased to choose. We observe that out of these ten operators a certain number produce the same effects of anesthesia, contracture, attractive movements, etc., as I produced, with greater or less rapidity, intensity, etc., whilst the remainder do not produce any appreciable effect, even after the hand has been allowed to remain there for ten,

fifteen, or twenty minutes. Therefore, among those present, some send out the magnetic influence, while others do not, without our being able to know *a priori* who is competent to do so. These results, moreover, continue from one séance to another, that is to say, that the operator who has shown himself effective at one séance will generally be so at another, and he, who has not produced any effect at the first séance will not afterwards do so.

But the following is a still more extraordinary phenomenon. It is that the magnetic influence may be transmitted, at least, momentarily, from one who possesses it to another who does not possess it. Take, for instance, an individual A., who presented his hand for twenty minutes without any result being produced on a magnetic subject, who had been influenced in less than a minute by another individual B. It is sufficient for A. to place one of his hands in one of B.'s and place the other hand in front of the subject for the effects of anesthesia, contracture, etc., to be produced in the part covered by the free hand in about a minute. When he ceases to hold B.'s hand, he again becomes inefficient—and I have myself made this experiment with a French philosopher of universal repute, whom I had the honour to have for my master, M. A. F. If the individual who does not himself possess this power remains sufficiently long in contact with the one that possesses the magnetic influence naturally, the influence accumulates in some way in him, and when he is sufficiently charged he can, during a certain time, successfully operate by himself.

We can understand how such experiments would throw light on the connections and differences between suggestion and mesmerism if they were methodically reproduced and checked by a large number of observers; but it is essential not to refuse systematically to make them by starting from the preconceived idea that "it is

not mesmerism (any more than hypnotism), it is only suggestion."

There is another experiment which, it is true, we have only once made (we have repeated the preceding one more than a hundred times) and which would tend to prove that there must be a preliminary mesmeric relationship—mediate or immediate—between the suggestioner and the subject, to enable the suggestioner to work effectually on the subject.

It was sufficient for me to present my open right hand for half a minute in front of Gustave P. in order to place him in the first condition characterised by extraordinary suggestibility (the state of fascination or credulity), but in which he preserved all the external appearances of the ordinary waking state. In this condition, if one of the persons present spoke to him, in order to suggest an hallucination, paralysis, etc., the subject who had perfectly heard and understood the words spoken did not obey the suggestions, but if the suggestioner held me by the hand (the subject's eyes being bandaged) the suggestions immediately became as effective as if I had made them directly myself.

Thus we think that we may affirm that, in many cases, unknown to the suggestioners themselves mesmerism plays a preponderant part in suggestion. In any case, the question is sufficiently important to be worthy of study—not, as is done too often, with purely theoretical arguments and objections—but with the only arguments which are really decisive in such a matter, that is to say, with experiments.

In order to satisfy this natural desire for explanation in the human mind, if we now try to understand how suggestion and animal magnetism, which appear at first sight to be two absolutely heterogeneous agents, can thus each supplant and affect the other, we shall be led to believe that suggestion is itself a transformation of

magnetism, an instance of "spontaneous or provoked auto-mesmerism."

It is perhaps curious to notice that the hypothesis we have just enunciated had already been propounded by a contemporary of Mesmer, the author of *Doutes d'un provincial, proposés à MM. les Médecins commissaires chargés par le roi de l'examen du magnetisme animal* (Paris, 1784). We may be excused for quoting here some passages from this little-known work.

"Would not the fluid of which M. Mesmer speaks so much, this fluid of which you deny the existence and utility and which its apostle regards as the servant of all man's vital functions, also be that of all the intellectual functions; the servant of sensation, memory, imagination, in short? And if imagination is itself one of the phenomena of this agent, what will you have done, gentlemen, in crediting to imagination only all the effects of animal magnetism? You would have thought you had destroyed altogether the cause of magnetism during the time that you were causing it to act very strongly in another direction; you would have concluded that this cause did not exist because you made it exist elsewhere; finally, you would have proved that it was by no means animal magnetism almost as I should prove to a vigorous man that he has no arm by binding him as fast as possible.

"When you wished to prove that this reciprocal action called *animal magnetism* was a chimera you undertook to *draw upon the imagination* of a sensitive person and you have immediately produced some results of animal magnetism and then you have drawn your conclusion. But, I ask you, what is it to *draw upon the imagination*? I understand by that expression that we decide that this internal and unknown power, that which we call the mind, has suddenly projected into the brain and from the brain to some other part of the body, a very great abundance of this fluid which we call *animal spirits*, and Mesmer *animalised fluid*, but the sudden affluence of a

very large quantity of this active fluid in a certain part of the body can doubtless produce a very marked, very active and even dangerous sensation; who denies that the mind has not this astonishing power over the body?

“But do you conclude that by a law worthy of the beneficence of nature, a man by touching or only approaching his fellow-man in a very simple manner, has not also the power of producing in certain parts of his body the affluence of a certain quantity of this fluid?

“You set about it in another way and always by drawing upon the imagination. When you have placed, with great formality a bandage over the eyes of a very sensitive subject, whilst really magnetising him, you assure him that you have not magnetised him; or you take away all idea of magnetism from him by some animated and skilfully contrived conversation; what happens? You cause the *spirit* and the internal fluid of thought to flow to the part of the body on which his attention and imagination are directed, and then the most vigorous operator remains powerless, nothing appears to operate, and this is exactly what might be expected. The fluid, the action of which produces animal magnetism, was strongly excited by you to produce the phenomenon from the imagination: could it produce these two great effects at once?

“It is therefore true that in your well-known objection of the imagination you have probably done nothing else than oppose Mesmer’s agent to himself, and that you have no more destroyed it than you would have insulted yourself by smiting your own cheek; this would only prove that you had a cheek and a hand and that they are really yours. In the same way that Mesmer’s agent produced the imagination, it also produced animal magnetism; these two phenomena belong to this agent, and when one of them opposes the other, it is the hand which smites the cheek.”

Without attaching more importance than necessary to a hypothesis which does not appear to us, at least, until we have fuller information—susceptible of experimental verification, we can admit that the agent which

animates our nerves and which conducts the sensitive impressions to the brain at the same time that it conducts the motor impulses to the periphery is also that which projecting itself outside the nervous system, serves as vehicle and instrument for the magnetic influence exercised by one individual on another. Then the action by which my brain moves my arm is, fundamentally, of an identical nature with the action by which it would move the arm of another person. But suggestion, at least as it is understood by the School of Nancy, is only a special form of the action of the brain and the nervous system on the remainder of the organism. It does not differ, therefore, essentially from magnetism.

But it seems that in all these more or less extraordinary and exceptional phenomena, the unknown force which is the agent of that which we call the nervous or *neuric* force—is manifested in altogether special conditions of diffusibility and conductibility. With normal individuals in the normal state, the force which animates the system follows, so to speak, regular and pre-ordained ways, and if some external or internal cause tends to disturb its equilibrium, it immediately re-acts in such a way as to re-establish it. Moreover, it doubtless receives the radiations from other nervous systems, but these are neutralised in some way, in proportion as they are received, so that everything happens apparently as though they had not been received. On the contrary, every time that the phenomena of suggestion and magnetism become possible, we say, on the one hand, that this force has acquired the property of mobilising itself with an extreme rapidity in all parts of the organism, either under the action of the imagination or the will, or when as the result of certain physical manœuvres and influences, it is instantly directed towards and accumulated in certain points, abandoning and forsaking certain others at the same time ; on the other hand,

that it ceases to be impenetrable or at least indifferent to the force of the same nature which another nervous system sends it, and that it then remains influenced by it, as if each belonged to one and the same individual and were governed by the same consciousness.

In short, the common condition of all these phenomena appears to be a kind of abnormal *plasticity* of the nervous force, which is thus found capable of undergoing passively all the impressions which come to it either from within, in which case it is ordinary suggestion, or rather auto-suggestion ; or from without, in which case it is mesmerism, either simple, or complicated with telepathy, improperly called mental suggestion.

CHAPTER X

EXPERIMENTAL RESEARCHES IN SLEEP PROVOKED AT A DISTANCE

How is hypnosis produced ? Is it always, as the School of Nancy claim, simply the effect of suggestion, that is to say, of the conscious expectation and conviction of the subject ? Or is the mechanism more obscure and more complicated than appears from the theories of this school, and does the personal influence of the operator take a part, at least, in certain cases altogether distinct from suggestion ?

The question, in our opinion, ought to remain open ; they are deceived who, hastening to close it, declare with Professor Bernheim that suggestion is the key to all the phenomena of hypnosis. They are thus compelled to pass over without seeing, or even from prejudice denying, the existence of very real and significant phenomena, such as we propose to relate here.

I

In September 1892 I was spending a holiday with my family in the small town of Amélie-les-Bains.

There had been much talk during the year among the visitors of the séances given at the Casino by a young man, of the neighbourhood, who called himself Dockmann. I attended through curiosity. The medium, who was about twenty years of age, dark and spare of figure, and evidently very nervous, had, it appears, three years previously

served as subject to a naval doctor, and these experiments had caused him to take up the vocation of thought-reader. Every one knows this class of performance, where one of the audience endeavours, more or less successfully, to transmit his will to the medium, without words or gesture, and even without contact, by a simple mental effort.

The penetration of the young mountaineer appeared to me to be frequently defective, and he himself confessed that he tried to guess the intentions of his conductor by all sorts of indications. "You ought," I said, laughing, "to be put into a trance so as to recover your former lucidity; if you feel inclined, I am quite willing to render you this service."

Dockmann appeared surprised and somewhat offended by this proposition. "It is I who send people to sleep," he said, "I am no longer put to sleep myself."

However, a few days later, probably to humour the mayor of the town, who seemed desirous of being present at a hypnotic séance, Dockmann consented. Accordingly one evening, about ten o'clock, before a circle of four or five persons, I took hold of his thumbs and looked steadily at his eyes: at the end of a few minutes he fell asleep, if we may so call the comatose or cataleptic state into which he appeared to be plunged. His whole body was stiffened, his jaws contracted, and, with great difficulty, brief responses to questions were obtained. The awakening took place very slowly. A second sleep presented the same characteristics, except that the subject was more quickly awakened. Briefly the subject did not seem very interesting, and I did not see that much could be got out of him.

The following day, according to custom, I went to the Casino about mid-day to have some coffee and to be present at a rehearsal of a piece which was to be played that evening. The small theatre occupied the end of a garden, shaded by large trees; there were seats and tables for customers, and overlooking the theatre and the garden was a long terrace to which the *habitues* came every day to play cards.

I seated myself on the terrace, and, while sipping my

coffee, looked down on the scene beneath me. Dockmann was sitting in the garden with a friend who was reading a newspaper; his back was almost turned to me and he began to roll a cigarette. I do not know how, but the idea came to me to try the experiment here described, and with all the force of my will, I immediately put it into execution. Concentrating my mind entirely on this one thought, I looked steadfastly in Dockmann's direction, and commanded him to stop all movements and go to sleep. Dockmann did not appear to perceive that I was looking at him, but his actions quickly slackened, and his eyes became fixed. The unfinished cigarette remained in his hands, he suddenly dropped his eyelids, and became motionless as a statue. His friend raised his head, perceived his condition, questioned him, but obtained no response. A singer seated at a neighbouring table became frightened and screamed aloud. I hastened and went down, and in a few moments, by breathing quickly on his eyes, awoke my improvised subject, who did not even seem to know what had happened to him.

I had made this experiment on the bare chance, not at all counting on success, and was myself astonished at the result. On the following day I had the opportunity of repeating it. I reached the Casino about half-past one. On this occasion Dockmann was sitting on the terrace by himself at a table writing a letter, bent nearly double, his nose almost resting on the blotting-pad. My table was five or six yards away; between us was a party of four, playing cards. I again concentrated myself with a nervous tension, which caused me to vibrate from head to foot, and, while looking quietly at Dockmann, I commanded him with all my power to cease writing and go to sleep. The action was slower than the night before. It might be said that the subject struggled against my will. After one or two minutes he gave visible signs of a thrilling sensation; his pen remained suspended, as if he sought in vain for words; he made a gesture with his hand as if throwing off some obsessing influence; then he tore up the letter he had commenced and began to write another but his pen soon remained fixed on the paper and he went to sleep in that position. I went close up to him, with

several others who had stopped their games; his whole body was contracted and hard as a piece of wood; we tried unsuccessfully to bend one of his arms; the stiffness was only removed by means of passes; the waking was accomplished by blowing on his eyes. When he had recovered the use of his senses, he begged me not to repeat these experiments; he complained of having been much fatigued by the former one. He stated, moreover, that he had gone to sleep on these two occasions without having had the slightest suspicion that the sleep had been caused by me or by any one else.

II

My attention having been thus directed in an altogether unexpected manner to the phenomenon of sleep provoked at a distance and unknown to the subject, I promised myself to seize every opportunity that might present itself to me to study it.

This opportunity was offered me by young Gustave P. to whom I have already referred in Chapter VII.

I had made several series of experiments with him, especially during the first half of the year 1894. In the course of one of these séances, I prepared to awaken the subject in the ordinary way, that is to say, by verbal suggestion and by agitating the air in front of his face, when before I had uttered a word or made a gesture he awoke spontaneously. I asked myself whether this awakening had not been produced by a kind of thought communication, and proposed to verify this hypothesis by some new experiments specially directed towards this end, but unfortunately Gustave P. had to leave Paris to take up an engagement in the country and I lost sight of him for more than seven months. I recommenced my séances with him in February 1895. They continued from this time, without serious interruption, until July 1896; and I had the opportunity of witnessing, as often as

I wished and in very varied conditions, the phenomena of sleep and awaking provoked at a distance by a simple mental action.

This phenomenon became as familiar to me and almost as easy to produce as sleep by suggestion, gaze or passes; it is impossible for me to relate here all the cases in which I have produced it. I will content myself by giving a few of the most striking instances.

The special difficulty connected with this kind of experiment is that it is necessary for the subject not to have any suspicion through any indication of the experimenter's intention: he ought to be sent to sleep absolutely unexpectedly by himself, and without being able to foresee anything in any way. Also it is scarcely possible to arrange the experiment beforehand; it ought most frequently to be improvised at the very moment when chance gives rise to a favourable opportunity, and its value as proof almost always arises from very special circumstances connected with the surroundings in which it is produced. The necessary anecdotal character of the experiments I shall relate will therefore be excused.

On February 27, 1895, Gustave P. had just been put to sleep, and during this sleep I experimented with the various phenomena of attraction and pricking produced in various parts of the body by the presentation of the hand, such as I have described in Chapter VII. As this kind of experiment quickly exhausts the subject I awakened him and allowed him to rest, conversing with him on various subjects. At this moment I noticed that the fire in the grate, close to which we were sitting, had gone out, and I rang the bell for the servant to come and re-light it. Whilst she was attending to this Gustave and I remained silent. The thought then came to me to try and take advantage of this opportunity of sending him to sleep solely by an effort of the will. Without looking at him, my eyes being fixed in the direction of the fireplace, I mentally commanded him to go to sleep, with all the will power of which I was capable, and in less than a minute, before the fire was re-lighted, raising my eyes towards him, I saw that he was asleep. When we were alone I asked him why he had gone to sleep without

my permission ; he told me that he had suddenly felt the same heat and disturbance in his head which always preceded the sleep which I provoked ; this was the only reply I could get and it was the same every time I put the question afterwards. After he had been to sleep for about a quarter of an hour, during which time I repeated some of our previous experiments, he became unnerved again. I told him to sleep quietly for ten minutes when I would waken him and he would be quite rested. Then I went to the window, and with my back turned towards him, I mentally commanded him to awaken. The mental command was much stronger than the verbal suggestion, because in less than a minute after the subject gave a deep sigh and woke up. A few moments afterwards I sent him to sleep again by an internal act of will.

From this time I did not miss a séance without experimenting with this phenomenon, often several times during the same séance, at every opportunity offered me. I should remark that, particularly in the earlier days, I experienced a very great lassitude on the following day, a feeling of exhaustion and emptiness, particularly localised in the occiput, and, by a singular coincidence, the day after the séance which I have related, the subject spontaneously complained to me of having experienced the same sensation in the same part. However, the mental action necessary thus to induce sleep is always accompanied by an extreme cerebral tension ; it is not sufficient to think once for all that we wish to send the subject to sleep, it is necessary to concentrate, to prolong this thought or rather this desire for one or two minutes, thirty seconds at the least ; and, in proportion as this tension is prolonged the nervous fatigue rapidly increases and soon becomes almost intolerable. However, here as in other things, habit gradually diminishes the effort, and in later times I succeeded in mentally sending my subject to sleep without experiencing very great fatigue.

III

I have made a large number of persons witnesses of these experiments, amongst others, M. K., house surgeon at Dr. Berillon's hospital. M. K. came to my house one evening accompanied by one of his friends whom he had sent to sleep. After making a number of experiments with Gustave P. I finally awakened him, and speaking to M. K. and his companion asked them if they were willing to experiment. M. K.'s subject was immediately sent to sleep by suggestion, and Gustave P., who looked at him with very great curiosity, expressed to us the interest which he took in this spectacle. Whilst his attention and that of all the spectators was directed to M. K. and his subject, I mentally commanded my subject to go to sleep. As I have observed in all similar cases, that is to say, when the attention is strongly excited by some object or interesting event, he unconsciously opposed to me a rather lengthy resistance, and it took nearly three minutes to induce sleep. When I had sent him to sleep I drew the spectators' attention by means of gestures. They had not been advised of my intention and thought that he had gone to sleep through imitation or sympathy by looking at M. K.'s subject asleep. I made them understand by signs that I had caused this sleep, but I clearly saw that they were not convinced. Accordingly, a few minutes after, I passed round a paper on which I had written: "I will awaken him by mental means;" then whilst M. K. continued to experiment with his subject I mentally commanded Gustave P. to awaken. This fresh action was almost as slow as the first; but, eventually, after about two minutes of cerebral tension, I had the satisfaction of seeing Gustave P. open his eyes and leave his statuesque immobility. By the words which he then uttered we understood that he had no suspicion of the intervening sleep. I wished fully to convince the spectators of the reality of the phenomenon, so I watched for an opportunity of presenting it to them the second time. This is how it occurred. M. K.'s

subject only seemed to be half-asleep. M. K. suggested to him out loud, that when the clock struck ten he would go into a deep sleep. The hand at that moment showed that it wanted ten minutes to ten. Gustave P.'s curiosity was redoubled and his eyes were alternately on the subject and the clock. I advised the spectators of my intention in writing. (Gustave was used to seeing notes circulated in this manner, seeing that in the experiments I made with him in front of spectators, I spoke as little as possible.) The hand was at five minutes to ten, and Gustave was already asleep. I allowed him to sleep until a quarter past ten, and, after advising the spectators, again in writing, I awoke him without saying a word or making a gesture, simply by the action of my will. He immediately took up the thread of his conversation at the point where I had interrupted it, and as he expected M. K.'s subject would go to sleep at ten o'clock, he was astounded to see that by the clock it was a quarter past ten, and we heard him state that he understood absolutely nothing of what had happened.

Hitherto I had only produced sleep by mental action during a séance already commenced, after having put the subject to sleep by other processes (most frequently by placing the hand in front of the forehead or by means of passes). Could I send him to sleep at the first onset, at the commencement of the séance, after an interval of from eight to ten days since I had seen him? I experimented in this direction and the experiment gave an affirmative answer to the question. D. H., librarian at the School of Medicine, and one of his friends had come to my house, and began to question my subject on his antecedents, impressions, etc. Whilst Gustave P. conversed with them, I was in another group with my back turned to him. I then mentally commanded him to go to sleep, and, in the middle of a sentence, his eyes closed and he remained mute. As this always happened when he went into somnambulism he was no longer in relationship with anyone except myself. I tried the same experiment on another occasion in slightly different conditions. I had experimented for a long time with G.

before a rather numerous society at a friend's house ; the séance was ended, and we went into the dining-room to have some tea. My subject was surrounded and conversing in the middle of a group ; I was at the other end of the room in another group, separated from him by several sets of people. Whilst seemingly paying great attention to what one of my questioners was saying, I sent my subject the mental command to go to sleep, and I heard exclamations of surprise and almost of fright from those surrounding him at seeing him suddenly become immobile, his eyes closed, and the word he was uttering, in a manner, broken on his lips.

It will be noticed that in all the preceding experiments I was in the same room as the subject, a short distance away, without any material object separating me completely from him. Could the phenomenon be produced if we were in two different places, with one or several doors between him and me ? This is how I succeeded in solving the problem. After a rather long sitting, at which, unless I am mistaken, M. K., of whom I have spoken, was present, Gustave asked my permission to return home (he lived at Montmartre). When he had said "good-bye" to those present I accompanied him into an ante-room, but just as he was leaving we heard a great noise on the windows ; it was the rain falling in torrents. Although the hour was late, he could not dream of setting out in such weather ; I therefore induced him to come back to the dining-room until such time as the rain ceased. Slightly suspicious that we should recommence the experiments, he asked me to allow him to remain in the ante-room until he could start. I very willingly consented and went back to the dining-room to rejoin my friends, closing behind me the door separating the two rooms. I then took advantage of this unexpected opportunity of experimenting with the phenomenon in conditions which seemed to me to be absolutely satisfactory. At the end of a minute after my action, on opening the door, we saw Gustave asleep on the chair in the ante-room on which he was sitting. The door was again closed and I sent him the mental order to awaken ; and a minute afterwards, we saw Gustave

awake, in the act of lighting a cigarette, having evidently no knowledge of this short sleep.

At another séance several of my friends, amongst whom was Dr. B., had met together in an adjoining room in order to experiment between themselves; I interrupted my experiments, and my subject and I then played the part of spectators. As the gathering was rather numerous I left the room without anyone (save the one whom I had advised of my intention) noticing my departure. Gustave at the time when I left was all eyes and ears for what was going on around him. I went to the farther extremity of the apartment; an ante-room, a long corridor and two closed doors separated me from my subject. I mentally ordered him to go to sleep. A minute had not passed when my confidant came to me and said: "He is asleep." I sent him back to his post and mentally ordered the subject to awaken. Another minute again passed, and he returned to me saying: "He is awake."

It would have been extremely interesting to experiment with the phenomenon at greater distances, for instance from my house (*in the European quarter*) to Montmartre where he lived. I have never dared to do it, and that for several reasons. First of all, supposing that the experiment was successful, I should have no means of knowing it; because I could not place or send to him persons who could come to inform me of the result. Even the presence of these persons might awaken his suspicions and cause him to divine my intentions; and there would always be the objection to fear, that he had gone to sleep not because I wished it, but because he suspected that I wished him to sleep. On the other hand, in the hypothesis of success, I should not know in what circumstances he might be when surprised by sleep; it might result in very great danger for him. Even in the most favourable circumstances, if he was sent to sleep at home, amongst his friends, they would certainly not

attribute this result to action at a distance; they would probably conclude that he had contracted, as the result of my experiments, the unpleasant malady of going to sleep spontaneously (which has never happened); and I was by no means anxious to incur such responsibility. But we know that M. Pierre Janet, who secured very favourable conditions, entirely succeeded at Havre with these same experiments which we neither could nor would make.

The objection will perhaps be raised that the phenomena are connected in an indirect manner with suggestion, in the sense that the subject, coming to the operator's house for the purpose of experiment, if he does not know when and how he ought to be asleep, expects to be sent to sleep in one way or another, and that this general, undetermined expectancy of sleep is doubtless the preliminary condition of success in these experiments.

I shall not delay to demonstrate that this condition, even supposing it necessary, by no means suppresses the necessity of the personal action of the operator in order to provoke sleep at the exact moment in special circumstances. But this condition is by no means necessary as the following fact proves for the anecdotal character of which I once more ask to be excused. Gustave was not only a working electrician; he also gave bicycle lessons in his spare time. In this capacity he had taught a member of my family to ride, and frequently we all three went by rail to the Avenue du Bois de Boulogne Station, close to which he gave his lessons. During the journey, either going or returning, I often sent him to sleep by my will, from one end of the compartment to the other, whilst he was looking out of the carriage. Sometimes I did not awaken him until after the train had passed two or three stations, and as he had no knowledge of having slept, he could not explain how he had passed these intermediate stations without seeing them. There

is therefore no authority for stating that it is necessary for the subject to be under the influence of this preliminary idea that he is going to be experimented upon, in order to induce in him somnambulism by a mental action exercised without his knowledge and at a distance.

IV

I took my subject Gustave P. to one of the annual meetings of the Hypnological Society. I realised on this occasion the very great difficulty of experiments of this character before a large audience. It is clearly only by seeing them reproduced a very large number of times and each time before a relatively restricted audience that one can arrive at a definite conviction with regard to them. This is doubtless one of the reasons why facts of this character have never been really accepted by large gatherings of savants in any country.

I had asked Gustave to meet me at my house at about three o'clock. After he had been in my study a few minutes he asked me to give him something to drink. I went out of the room to give the order for some beer to be brought, and through the door I mentally commanded him to go to sleep. When I opened the door I found him asleep. I mentally awakened him and we resumed our conversation as though nothing had happened.

A quarter of an hour afterwards, on the top of the omnibus which took us to the Hôtel des Sociétés Savantes I tried to make him go to sleep again, but this time without success. We were probably too distracted for the communication to be made between us.

He was ushered into the lecture-room where he took his seat amongst the public, while I took my position on the platform. His attention seemed to be entirely

occupied by the addresses to which he listened with a visible interest. Our president had asked me in writing when I wished to experiment and I replied in the same way: "Immediately, if you wish it." On his acquiescing I concentrated all my will to provoke sleep; and in less than a minute my subject was asleep.

Our president raised the objection that he had perhaps divined my intention by some change in my face or attitude, and it was arranged that I should go into an adjoining room, and that there I should try to send my subject to sleep at a time agreed on beforehand. But then some peculiar disturbances of the phenomenon occurred which could doubtless be explained if we knew the intimate mechanism.

First of all, whilst we made these arrangements the subject awoke spontaneously without the order having first been given by me (which had never before happened), and when I went back into the other room, before I had begun to commence my action (because the time agreed upon had not yet arrived) he was again asleep, doubtless spontaneously. I therefore contented myself with giving him the order to awaken, and he in fact did awake, but from this moment he appeared to be entirely removed from my influence. I tried on several occasions to send him to sleep from the adjoining room, but my efforts apparently only had the result of producing in myself an extreme fatigue.

When the time came to present Gustave to the public, I sent him to sleep by the presentation of my hand and demonstrating the peculiarities of his various states of sleep, after having given particulars of the majority of the experiments here recounted; then, wishing to give at least one material illustration of action at a distance, I wrote on a blackboard: "I wish to awaken him at a distance," and the subject, whom I had left asleep on a

chair at the other end of the room, was, in fact, awakened in less than a minute.

Such are the facts concerning which I have confined myself to-day to calling the attention of readers; I will try further on (Chapter XX) to give an interpretation of them.

CHAPTER XI

TELEPATHY

1. THE word *Telepathy*, which signifies *feeling or perception at a distance*, has been used of late to designate a certain order of facts which have been specially studied in England and America, principally by the Society for Psychical Research and which have many affinities with other facts formerly known under the name of *presentiment, double or second sight, mental suggestion and thought transmission*.

We can, it is true, include both of them in the same group, and generalise the meaning of the word telepathy in such a way as to make it the name of the whole group. It will describe all the phenomena in which a human being perceives at a distance and without the aid of the ordinary senses, either the will or the thought of another person, or events happening in places more or less distant, or even facts still in futurity, or which have occurred in the remote past.

But custom seems to give a more narrow and more precise meaning to the word telepathy, and that is why we have proposed¹ to give the name *telepsychical* to the whole of these phenomena.

All those cases belong to telepathy proper in which an individual A spontaneously perceives what happens to another individual B separated from him by a greater or lesser distance.

¹ See Chapter IV—"An attempt at classification of psychical phenomena."¹¹

The following is a characteristic example of telepathy, the account of which has been given by Agrippa d'Aubigné :—

“ The king was at Avignon on December 23, 1574, when Charles, Cardinal of Lorraine, died there. The queen (Catherine de Médicis) retired to rest earlier than usual, having present at the time, among other persons of rank, the King of Navarre, the Archbishop of Lyons, the ladies de Retz, Lignerolles and Sauves, two of whom confirm this narrative. As she was saying ‘ good-night,’ she leaped on her bed, put her hands in front of her face, and, with a violent cry, appealed for help to all who were present, pointing out to them the cardinal close to her bed who had held out his hand to her. She cried out several times : ‘ Monsieur le Cardinal, I have only to do with you.’ The king of Navarre sent one of his gentlemen to the cardinal’s room, who reported that he had expired at that moment.”

The study of telepathic facts has been specially followed in our days in England and America by a society which includes in these two countries, particularly in the first, a large number of members, and which is known as the Society for Psychical Research. The results of this study have been included in the work issued by Messrs. Gurney, Myers, and Podmore, entitled *Phantasms of the Living*, which has been abridged and translated into French by Mariller under the title of *Hallucinations télépathiques*. In France Dr. Dariex’s review *Les Annales des Sciences Psychiques*, has collected a large number of facts of the same character. The principal concern of those who have undertaken this study has been to secure for the accounts and evidence thus collected and registered as many substantial guarantees of authenticity as possible.

From the whole of these facts we draw the impression, if not the conviction, that there may be a kind of com-

munication, inexplicable by ordinary conditions, between two individuals separated by distances which are often considerable.

2. The circumstances of telepathy are moreover very variable.

Thus the phenomenon is produced sometimes during sleep and sometimes in a waking state. In the first case it takes the form of a dream; in the second it rather resembles a vision. The seer appears to be transferred in thought from his surroundings and becomes the spectator of a scene which is unrolled before him elsewhere; sometimes, on the contrary, the person who is the object of his vision, seems to appear before him in the place where he is in such a way that he at first thinks he has to do with, not an hallucination or a phantom, but a real entity.

There are also many degrees of precision and exactitude in this perception or abnormal representation.

Sometimes it is reduced to the spontaneous and sudden evocation of a thought, the thought of a relation or a friend, of whom there was no reason to think at the moment, accompanied by a physical or mental disturbance more or less marked, and there is clearly a great analogy between this rudimentary telepathy and that which we call presentiment.

At other times it is a real event, but unexpected and apparently inexplicable, which is suddenly produced, and which seems to be the news or telepathic symbol of a death or accident, for instance, inexplicable rappings, raps made on the wall, a glass which breaks, a picture which comes unhooked, etc.

Very frequently it is the sight of a person who suddenly shows himself and disappears, without saying a word, after having looked at the seer.

In other instances the apparition speaks, calls for assistance, utters lamentations, warnings, etc.

Finally, in the most remarkable instances of telepathy, everything happens as though the seer witnessed from a distance a scene which is being enacted, in fact, at the same moment in a remote place, sometimes in another hemisphere.

3. Such facts give rise in the minds of those who hear them to a large number of questions to which it is not easy to reply.

a. First of all, can we believe the testimony of the people who relate them ?

Many of them only know them at second or third hand ; a long interval has often elapsed between their occurrence and recital, and the imagination has accordingly had leisure to fill up the gaps of the memory.

However, even taking these objections into account, there remain too large a number of authentic cases for us to dismiss them altogether as necessarily unworthy of credence.

Then the problem arises : Is there really a causal connection between the telepathic vision and the event which was the object of that vision ? or is it not rather simply a coincidence ?

Suppose, in fact, that the telepathic vision may be an hallucination which is, by chance, found to agree with a real event ; it would be rightly remarked because of this concordance, whilst we should not attach any importance to an hallucination which did not appear to correspond to anything objective.

It therefore should be ascertained if there are not produced in humanity as a whole all kinds of hallucinations amongst which we encounter a very small number which strongly coincide with the realities.

It is in order to solve this problem that the Society for Psychical Research has made an enquiry on hallucinations in general.

We shall not enter into the details of the statistics in

which the results are summarised and to which an effort was made to apply the principles of the calculation of probabilities.

Let us merely say that the conclusion has been in favour of the probability of a connection of cause and effect between the telepathic hallucination and the event made known by this hallucination; if the concordance between each was due to chance, the proportion would be $\frac{1}{9000}$, whilst it is $\frac{1}{45}$.

b. In admitting this conclusion how do we explain the mechanism by which telepathy is produced?

In regard to this we can only make hypotheses, and these hypotheses consist of assimilating telepathy more or less completely either to the phenomena of mental suggestion and of action at a distance, or to the phenomena of clairvoyance and lucidity which the ancient magnetisers claimed to have often witnessed.

If again we take the generic name of *telepsychy* to designate the whole of these phenomena, we shall distinguish between an *active* telepsychy in which the principal part belongs to the operator, who imposes his will or transmits the thought, the subject being simply a receiver, and a *passive* or rather *perceptive* telepsychy in which the principal part belongs to the subject, who sees or perceives the distant event.

These two kinds of telepsychy are combined in an almost inextricable manner in the majority of instances; they can, however, be produced separately.

Take for example an hypnotic or magnetic subject who goes to sleep or is awakened every time I send him the order to go to sleep or awaken and only then, who divines my thought when I make an effort to communicate it to him, but who ceases to guess it when I make no further effort. It is clear that in such a case the active side of telepsychy absolutely surpasses the passive or perceptive side. It would be the same if I caused the arms, legs,

etc., of a subject to move without his being conscious of the operation by a series of acts of the will known to myself only.

But certain cases of telepathy seem to approach this type; they are those where the individual, the object of telepathic perception, appears to have exercised a positive action, totally incomprehensible otherwise, on the one or more who have had this perception. We can believe, for example, that certain deceased persons have concentrated all their powers of expiring thought on beings who were dear to them, and that this concentration has, in spite of distance, produced a telepathic impression on the brains of their relatives or friends. We may even suppose that this telepsychical action is sometimes exercised spontaneously, independently of all will, and not only on human beings but even on material objects. The portrait of a person is unhooked and falls without apparent cause in the presence of some members of the family; there is no hallucination or telepathic vision, the fall of the picture is a real fact which has been seen by all; but it has occurred at the same moment as the person's death. If that is not a fortuitous coincidence, it must be that at the moment of death there is produced under the influence of thought of the dying person a kind of spontaneous discharge, similar to that of the electrical condenser, immediately followed by oscillations or undulations capable of rapidly traversing great distances and finally disturbing a material object. That would be the equivalent of the Hertzian waves and wireless telegraphy.

On the other hand, here is an hypnotic or magnetic subject, who, whether by means of a glass of water or the crystal, or by the injunctions of the one who has placed him in the somnambulistic state, sees events which are really produced at a distance and which are, moreover, unknown to the sitters; it would evidently

not be a question in this case of an action exercised on the subject by the things or persons who figure in his vision; we have to deal here with an instance of purely perceptive telepsychy.

Does such a faculty of seeing or perceiving what is happening at a distance, without the aid of the eyes, ears, and ordinary sense organs, exist in a latent state in some human beings, perhaps, even in all, and can it be exercised spontaneously or be developed artificially under certain conditions still unknown or imperfectly understood? We have not at this moment to take sides on this question; but if this faculty exists, it is extremely probable that it intervenes in all cases of perfect telepathy, that is to say, in all those cases where the distant event, the object of telepathy, is found to be exactly perceived or represented.

There is nothing to forbid the combination of the two hypotheses of active and perceptive telepsychy, and this combination seems even to be indicated in the great majority of cases.

The following is the manner in which this mixed hypothesis may be formulated. First moment: the will or thought, unconscious even, of the dying person gives out a telepsychic action which instantly finds its way across space and which is as it were orientated in a certain direction; that is the moment of active telepsychy. Second moment: this action reaching a certain individual awakens in him, in the unconscious parts of his being, the latent faculty of perceiving or representing to himself things at a distance and resolves this faculty into an hallucination, more or less veridical; that is the moment of perceptive telepsychy.

We should, moreover, be wrong in attaching too much importance to every attempt at explanation of such an obscure and uncertain order of facts. It is infinitely more urgent to amass new observations and

particularly to investigate facts of the same order to which experiment is applicable, that is to say, mental suggestion and lucidity, artificially obtained under conditions which permit of analysis and truly scientific control.

CHAPTER XII

THE HARMONY BETWEEN TELEPATHY AND ANIMAL MAGNETISM

UNDER the title of *Le Magnétisme Vital*, M. Gasc-Defossés has written a courageous work. Even in our time it needs some courage to confess before hostile savants and an indifferent public that one sees a truth, a great unrecognised truth, in the mesmeric hypothesis of animal magnetism, and to labour to give it a position which science has obstinately refused to accord it for more than a century, but which it has the right to occupy.

I shall not be imparting information to the author by saying that his attempt is not the first, and I shall not surprise him by adding that it will doubtless not be the last. Animal Magnetism is a new America which has been alternately lost and found every twenty or thirty years; and this will continue whilst science neglects to establish itself there and definitely to explore it. Its history is thus one of perpetual recommencement. Every fresh investigator who ventures on this unknown territory re-makes the discoveries of his predecessors and in all good faith imagines that he is the first to make them. He succeeds in exciting the public's curiosity; for a few days, perhaps a few months, they are interested, then comes forgetfulness and they no longer speak of it except in a small circle of the illuminated, commonly looked upon as fools or charlatans, to whom magnetism is an object of faith as constant as it is superstitious.

It seems well, however, to consider how the question has advanced since Mesmer. First of all, it has been stated in more precise and less equivocal terms. Mesmer and his earlier successors attributed to magnetism, that is to say to the unknown influence radiating from the human organism and more or less directed by the will or mind, all cataleptic and somnambulistic phenomena that were observed or produced in the course of their experiments; they ignored, or at least, did not know sufficiently those two agents which are like younger brothers of magnetism; the one which Braid discovered and studied under the name of *hypnotism*, the other, of which Faria, and after him Grimes and Liébault, demonstrated the extraordinary power under the names of *imagination* and *suggestion*. Thus when it is perceived that the majority of the phenomena attributed to animal magnetism can be produced by simply prolonging the gaze on a brilliant point or by acting on the imagination and credulity of the subjects by the spoken word, the conclusion which they hasten to draw is that animal magnetism does not exist; and, even to-day, we constantly hear the partisans of the Schools of Paris and Nancy repeat with assurance this complete sophism, without however succeeding in establishing an agreement between themselves; the one denying hypnotism on behalf of suggestion, and the other denying suggestion in favour of hypnotism. The truth is that we are here confronted with what Stuart Mill called an instance of "plurality of causes," or as Durand (de Gros) said in a very remarkable article,¹ these phenomena are *polyetic*, that is to say, the majority of them are capable of being produced by one or another of several distinct causes. The explicit recognition of this truth is, in our opinion, the first and indispensable condition of success in all the

¹ "Les Mystères de la Suggestion," in the *Revue de l'hypnotisme*, 1896.

researches which concern this class of phenomena. Whoever studies them, setting out with this preconceived idea, that they ought all to be connected with one and the same cause, is placed at the outset in the position of being unable to see clearly.

The partisans of animal magnetism ought to be fully persuaded that there are in existence at least two other forces, hypnotism and suggestion, fully capable of counterfeiting or supplanting the mesmeric agent; and by that very fact their task from the experimental point of view becomes singularly limited and circumscribed. For them the only question is to resolve these two problems in a manner favourable to their hypothesis. (1) Is it possible to produce the majority of the usual results of hypnotism and suggestion after expressly eliminating these two agents, by the employment only of the supposed radiation from the organism and will that directs it? (2) Is it possible by setting this hypothetical agent in motion, to produce results which suggestion and hypnotism would evidently be powerless to effect?

If I may be allowed to speak here of my personal experiments, I should say that I have particularly endeavoured, in all those which I have hitherto made, to find the solution of the first problem. Those who have read this work will have seen that one common thought has inspired all these studies; namely, to obtain in subjects the usual results of hypnotism and suggestion, after rigorously excluding these two causes by an experimental purview instituted to this end, and only allowing to act, if it exists, the bio-magnetic force of the operator.¹

May I add that if the problem of animal magnetism is again propounded in these times, it is, in part at least, under this form? We know how according to the studies of the School of Paris and particularly of the School of

¹ See Chapters VI, VIII and X.

Nancy, official science (I understand from that, that which emanates from the academies and universities) thinks it has definitely annihilated the hypothesis of animal magnetism. "Suggestion," says Professor Bernheim, "is the key to all hypnotic phenomena," and by suggestion he understands the word or gesture of the operator creating in the subject's brain an idea capable of impressing his nervous system and of being realised in his organism. But there are some subjects who seem to obey the will or the thought of the operator without any word or gesture making it known to them, sometimes even apart from his presence and at more or less considerable distances; and the savants of Paris and Nancy begin to ask if there is not room to admit a special form of suggestion called *mental suggestion* in which the operator's thought or will is communicated directly to the subject without the usual intermediaries of word and gesture. With regard to this, the English savants have remarked that this communication of two brains through space can also be produced spontaneously, as proved in the relatively frequent cases of *telepathy*. But what are these phenomena, if not a special group of the results of animal magnetism?

It is true that the English and French savants who admit and study them are not yet aware of this, or do not willingly admit it. They do not see anything more than a particular form, an extraordinary case of suggestion, or perhaps also of hyperesthesia. They do not notice that what characterises these phenomena before everything else, is that they imply the possibility of a brain radiating at a distance, not the will or the thought itself, but an influence capable of transmitting or reproducing the will and the thought, like electric currents sent by a battery along telegraphic wires transmitting or rather reproducing the despatch at the other end. If the operator's brain sends nothing to the sub-

ject's brain, and if the intervening space contains nothing which brings them into relationship with one another, this communication of the two consciousnesses is a supernatural, supra-scientific phenomenon which has no connection with any other in the whole of our experience, and of which we must for ever renounce the hope of finding the explanation. Thus, when the members of the Society for Psychical Research gravely oppose the hypothesis of *effluence* to that of *thought transference*, that is to say, *animal magnetism* to *telepathy*, we cannot avoid seeing here a new example of illusions produced by words on the most capable minds. Is it not evident that *thought-transference* is only a particular form of *effluence*, to wit, a cerebral and mental effluence, necessarily more complicated and obscure than simple nervous and vital effluence ?

For ourselves, we see many more drawbacks than advantages in approaching the problem in this way. The exclusive partisans of telepathy seem to think that the power of influencing at a distance belongs uniquely in the human organism, to the brain, considered in its functional unity as the special organ of the will and thought. Whether they fully realise it or not, it is the psychical element (abstracting or even excluding the nervous element) to which they attribute this mysterious property. To our own way of thinking no opinion can be more unfavourable to scientific research. If it is the soul as such, which independently of all mechanism can thus make its action felt at a distance, we may well state the fact; but this eludes all scientific explanation, more especially all experimental research; because there is no explanation or experiment possible, according to the profound remark of Claude Bernard except when the phenomena are absolutely determined by their material conditions.

However, if we take the philosophical point of view,

there is absolutely nothing in the nature of the soul which justifies such a conception. Because a certain thought is in me (for example, the principle of an argument) we could conceive another thought which ought to follow, for example, the conclusion of this argument; but, although a certain thought is produced in my mind, how does it follow that another thought (identical or not in kind) comes to be produced in another mind separated from mine by all kinds of obstacles? From the moment that it is a question of space, we come from the immaterial sphere of the consciousness into the domain of matter and motion; the mechanical explanation of the phenomena, their experimental determination, becomes immediately possible and necessary.

But this conception of telepathy appears to us to be scarcely tenable from the physiological point of view. Without doubt the brain performs a preponderant and in some way unique part; it is the organ of conscious, intellectual and moral life. Sometimes, its psychological functions (if we may so call them) have evidently the physiological elements which compose them as their base or conditions. Neither sensations nor will would be possible if the nervous fibres did not possess in themselves the property of conducting motion, if the nervous centres did not possess that of receiving, reflecting and transforming it. But these properties are not peculiar to the elements of the brain; they are common to all the elements of the nervous systems; they are the general properties of the neurones. Hence, if the will or thought can in fact communicate from one brain to another, all the analogies not only authorise us but even compel us only to see in this phenomenon a special consequence of some general property of the cerebral and nervous cells, anterior, so to speak, to will and thought themselves; and in what could this property consist if not in a sort of radiation or expansion of nervous force which the

phenomena of heat, light and electricity make it relatively easy for us to conceive !

But what should be studied in the first place, in our opinion, primarily in order to prove its existence, then to determine its laws, is this general property of action at a distance, which under the name of animal magnetism we think should be attributed to the nervous system.

We can only repeat here what we have already said elsewhere :—

“ In all science a certain order is necessary ; in so far as we do not find it, we wander at random. Certainly we do not wish to discourage those investigators who apply themselves with so much ingenuity and perseverance to clearing up the mysteries of telepathy, mental suggestion, externalisation of sensibility or motricity, or other phenomena even more extraordinary, but we are very much afraid that they are beginning at the wrong end. We must begin at the beginning, that is to say with the more simple facts and facts more easy to witness ; but it seems that the phenomena of telepathy, mental suggestion, etc., are among the most complicated and most obscure.

“ Let us suppose for a moment that our savants are entirely ignorant of electricity ; that they have only heard of an apparatus in use, into which, according to certain travellers in distant countries, it is sufficient to utter a few words in order to be heard instantly at very great distances by the people with whom they declare they converse, and in order themselves to hear their replies (the telephone). Would such statements be believed ? The majority of savants would regard them as fables and shrug their shoulders. Some, however, would make an inquiry, they would ask all who have any information about this marvellous apparatus to be good enough to communicate it to them, and would hope by that means not only to assure themselves that it exists, but also to

find out the secret of its mechanism. Upon that, a number of travellers would send them detailed accounts of conversations which they had had by telephone, but without being able to explain, owing to their own ignorance, how the communication was made. Is it not clear that we should never succeed in discovering electricity ? To do that we must begin at the beginning, that is to say, prove first of all that friction developed in certain substances has the property of attracting other light objects, or at the very least, that zinc and copper placed in contact with acidulated water, liberates a special force, etc. Similarly, if we can one day understand the phenomena of telepathy, it will only be after having experimentally witnessed the most simple and direct results which living beings can exercise directly one on another at a distance, and not by collecting to infinity, as the English Society for Psychical Research and its French imitators have done, more or less authentic accounts of instances of spontaneous telepathy."

We doubtless escape the majority of these confusions and difficulties when we reduce, as M. Gasc-Defossés has done, the question of vital magnetism to the second of these two problems of which we have given the formula above; and therein, in our opinion, lies the originality of this study. However much we act on human beings, on subjects, whatever precautions are taken to exclude from these experiments all trace of hypnotism and suggestion, it is more or less possible to object that these agents, and particularly the last, still intervene even unknown to and against the wish of the experimenter; and this is, definitely, the perpetual objection of the partisans of telepathy (or mental suggestion) to explaining these phenomena by animal magnetism. But when it affects material objects, or physical apparatus, will it still be claimed that these apparatus allow themselves to be hypnotised or suggestionised in some way ? And

if the phenomena observed are connected in a regular manner, but without contact and without material intermediaries, with the presence, movements and voluntary efforts of the operator, is it not necessary to avow that the bio-magnetic force of the human organism is the only possible cause of such results ?

The author of *Magnétisme Vital* has therefore every right to call the attention of all savants to the excellent experiments made by M. Puyfontaine with his galvanometer. He has seen and shown its capital importance for the definite verification of animal magnetism. These experiments introduce a new phase into the question, and, perchance, if men of science consent to examine and reproduce them, some will decide to undertake themselves, with all the resources of scientific method, a study in our opinion as interesting and also as fruitful in discovery as the higher branches of physics and physiology. Animal magnetism still awaits its Claude Bernard or its Pasteur. May this book inspire him !

CHAPTER XIII

A CASE OF APPARENT TRANSPOSITION OF THE SENSES

WE often find in the writings of the ancient magnetisers the mention of very singular observations, which they describe under the name of the *transposition of the senses*. According to them in certain special conditions of somnambulism, the various senses may in some way be transposed from one to the other. Thus, the organs of touch may exercise the functions usually performed by those of hearing or sight. The somnambulist sees through the finger tips, hears through the epigastrium, etc.

We have had personally the opportunity of seeing in Paris a subject who presented phenomena of this kind. Mme. V., well known to people in the habit of attending séances devoted to magnetism, claimed to have the faculty when once placed in the somnambulistic condition, of reading through the finger-tips. The following is an account of the experiment, at which we were often present, and which we have more than once personally directed and controlled.

First of all, the subject was put to sleep, preferably by prolonged gaze. We then brought some gummed paper of which bands were made, which we moistened and pasted over the eyes in such a way as to secure the eyelids. This done we placed over all a thick bandage firmly tied behind the head, and the spectators were asked to pass to the subject all the written and printed papers they desired her to read. At the beginning the subject asked preferably to be given large print to read such as the titles of newspapers. She then passed her fingers over the papers, sometimes brought them up to her forehead or placed

them on the epigastrium, and generally read unhesitatingly, without mistake, and with very fair ease. Sometimes, however, the subject declared herself unable to see anything; she then asked to be awakened and put to sleep again, and nearly always on the resumption, the experiment succeeded. Once fairly started, Mme. V. deciphered as though making light of it, not only visiting cards and printed lines, but also letters, notes written in ink or pencil, in very fine characters often almost imperceptible. She even saw and described photographs. Finally if we placed a watch in her hands, whatever the time indicated, she saw and divined by passing her fingers over the glass, but she took the precaution to envelop the case in a handkerchief, because, she said, the gold would cause her to feel a burning sensation. At the end of a short time, about a quarter of an hour, she complained that she felt her faculty declining and that it would presently disappear and she asked the persons who wished to put it to the proof to make haste. Eventually she said: "I cannot see any more, awaken me." We then lifted the bandage, and verified the fact that the paper bands had remained fixed on the eyes. After having moistened and detached these bands the subject was awakened in the ordinary way.

One of my friends, D. G. D. who witnessed this curious phenomenon was very much struck by it. "There is evidently there, he said, an extraordinary case of hyperesthesia of touch." However, although Mme. V.'s good faith seemed unquestionable I could not refrain from a certain scepticism owing to the fact that she was a professional subject. Perhaps, I thought, in spite of the gummed paper and the bandage, the closing of the eyes was not perfect, perhaps she makes use of some trick in order to cause her gaze to pass across or under these apparent obstacles while the paper is held between her hands. I wished to be absolutely sure of the reality of the phenomenon by experimenting with some new subject who had never heard of it, who had even no idea of it, and with some one whom no one but myself had ever sent to sleep.

Chance caused me to meet with such a subject at the

beginning of the winter of 1904. Ludovic S. of the age of twenty years, was then employed as draughtsman in a large industrial establishment. I experimented specially with him in the two last months of 1904 and for the first six or seven months of 1905. He left for military service in October 1905, and I only saw him at rare intervals, when he obtained permission to spend a few days with his parents. In January 1907, his father's death unexpectedly intervened and liberated him from military service as he had to support the family. But one of the public offices to which he belonged, since he had successfully passed an examination shortly before his departure for military service, sent him to the North of France where he still is to-day.

In these circumstances, it has not been possible for me to experiment with Ludovic S. in the constant and regular manner that I wished. I have, however, been able to observe in the short and too few sittings which he has been good enough to give me, a large number of very interesting phenomena, among which was that of the apparent transposition of the senses.

From my first meeting with him I perceived that I had to do with a subject of extreme sensibility, although he had never been suggestionised, hypnotised, or magnetised by anyone. In fact, immediately after having applied to him, without any previous explanation, the diagnostic of Dr. Moutin (attraction by the shoulder-blades) I could by simple suggestion paralyse or contract the arms and legs, produce and maintain the closing of the eyes, etc. Having thus made him close his eyelids for a few minutes, I noticed that when he re-opened them, he had no recollection of what had taken place during the interval. From that time, in order to put him into a state of hypnosis, in all our subsequent experiments, I only had recourse to this very simple process : "Will you close your eyes ?" I said to him ; "Can you open them ?" Almost always on this first occasion the eyes were re-opened ; but after the second or third attempt they remained closed. I then took a thick bandage, which had already been used for experiments of this character and of which I have elsewhere given the description, and

applied it to the face of the subject, in such a way as to prevent him seeing anything even if he had the slightest inclination. When these experiments were concluded, that is to say, at the end of a quarter of an hour or half an hour, I said to the subject : " You can open your eyes," and he opened them immediately, having no recollection of anything that had taken place during his hypnotic condition, and feeling no fatigue.

It was during one of our first séances that I thought of trying to reproduce with him the phenomena observed with Mme. V. As he talked with me in the hypnotic condition with as much freedom and lucidity of mind as in the waking state, after having told him of the experiments with Mme. V., I asked him if he was willing to try to reproduce them. " And do you think," he said to me, " that I could read in this way with my eyes shut ? " " I do not know," I replied, " but we can at least try."

Then taking a letter at hazard from a case I put it into his hands, and at his request I explained to him what he ought to do. " Do," I said, " just as Mme. V. did. Pass your fingers over the paper; hold it up to your forehead, or to the epigastrium, until you feel something." After having conscientiously tried these different experiments, S. said to me : " I do not feel anything; it is an impossibility. It must be a trick." I remarked that he was perhaps discouraged too quickly, that he must give longer time to it at the commencement and try to secure some result, and I invited him to try again. He began to feel and press the paper with an air of deep attention, and suddenly he gave a kind of start. " What is it ? " I asked. " Nothing," he replied. " Yes, there is something," I replied, " because you gave a jump." " No, it is impossible, it is absurd." " That does not matter, tell me exactly what you felt." " Well, it seemed to me that there was written on the paper, ' My dear Camille . . .' No, it is not ' My dear Camille ' ; it is ' My dear Emile.' Perhaps it is only a coincidence, we shall soon see."

Then remembering that Mme. V. always recommended commencing with texts printed in large characters, I placed a newspaper in his hands and said to him : " Tell

me the title of this newspaper." He asked me to indicate the exact place of the title, and placing his fingers along it, he very quickly said to me: "Is it not the *Progrès de Lyon?*?" "Very good," I said to him, "but that is perhaps only a coincidence, because that newspaper has a large circulation in the district. Here is another." "Is not that the *Moniteur des tirages financiers?*?" For once doubt was no longer possible. "Bravo, my friend, you see that you can read with your eyes closed."

To my great surprise, he protested: "No, sir, I do not read." "What do you mean, you do not read! What did you do?" "I felt nothing under my fingers, I saw nothing in front of my eyes, it suddenly came into my mind, without my knowing how or why, the thought that it ought to be this or that. I quite supposed that it was you who had suggested it to me in thought." "As to that," I replied, "it is quite possible, although I doubt it. We will try to clear this up another way." Upon that I awakened him and he left me.

He came again about a week afterwards. I had prepared a large number of squares of paper, on which were written words and sentences in pencil, black and red ink, and S. deciphered them with really astonishing facility. I noticed, however, that he did not see the difference between the colours; thus, between two papers bearing the same number, the one written in red ink and the other in black, he could see no distinction. He could read nothing on the paper on which I had traced with the dry pen without any ink, nor with a pen dipped in water. He clearly recognised the outline of several objects, which I had traced in ink beforehand. He continued, moreover, to have the impression that he was not reading or seeing, but that he divined somehow by a kind of mental intuition. This last expression seems to me to be the best way to express it. I could not satisfy myself as to what part I personally played in this phenomenon.

It was only at the third sitting that it was possible for me to solve the problem. There were a large number of persons present at this séance, to whom I showed, first of all, the phenomenon of reading through the finger-tips,

such as I have described. One of them asked me if the subject really read or if he only read my thoughts. I replied that I did not know, that the second hypothesis was that of the subject himself and that the occasion was a good one to verify it. I then asked my interlocutor to write a sentence of his own composition on a piece of paper. This writing was folded and I was consequently ignorant of the contents, it was placed by me in S.'s hands who opened and deciphered it without difficulty, except one mistake which he made in the initial of a word. In fact, owing to the peculiarity of this writing, a person reading the writing with his eyes open would have been just as likely to make the mistake.

But another experiment made in the course of this séance proved more completely still that the subject perceived directly of himself, and not as the result of a strange transmission or influence. One of the spectators, taking a book from the table, and opening it by chance, placed it in S.'s hands, who began to read the page of the book where it had been opened. This time, neither I nor anyone else in the company knew beforehand the text which he thus read, and there could therefore be no question of mental suggestion or thought transmission.

In all the experiments which I afterwards made with Lud. S. I endeavoured to analyse this curious phenomenon. The following is the summary of the results which I obtained and the conclusions at which I arrived.

First of all, up to what point does this special sensibility extend? We have seen that it does not appear to be affected by colours, nor by a simple form to which a larger or smaller quantity of matter does not adhere. It would therefore be necessary it seems, for there to be a certain relief. Let us note, however, that Lud. S. deciphered very correctly some photographs by simply passing his fingers over the surface. But it is possible after all and even probable, that the photographic salts decompose in unequal layers under the action of light. Let us also remark, although the fact is quite incompre-

hensible, that the subject can perceive this relief through a glass (as Mme. V. deciphered the time). On the other hand, S. could not read a paper covered over by another paper. But, possibly, he would have succeeded with a little more time and patience, and this last series of experiments should be recommenced.

What is the nature of this special sensibility, and what is the organic foundation of it ? The subject we know, at least at the commencement, refused to compare it either with sight or touch ; we may say that it appeared to him to be a purely cerebral phenomenon. However, his impressions as to this were somewhat modified. One day I asked him to put a glove on his right hand, and when he had done so I asked him to decipher a line of writing. After having tried for about a minute, he told me that it was impossible. I insisted ; he felt and firmly pressed the paper and read the text correctly ; then spontaneously : " You must be right," he said to me, " the touch ought to count for something in what I do, I do not know what it is I feel at my finger-tips, but it must help me to divine it." This impression of something at the finger-tips which helped him in divining, although always very vague, was however more and more confirmed in proportion as the experiments were repeated. Similarly, although perhaps in a more vague manner still, the subject has become by degrees conscious of visual representations incorporated with his mental intuition. Perhaps if this evolution continued we should succeed in getting the illusion of true reading.

It therefore seems that the essence of the phenomenon consists of an extraordinary hyperesthesia of touch, or at least that this hyperesthesia may be the first condition.

Granting this hypothesis, this is how we may analyse the phenomenon :—

1. By virtue of the extreme sensibility developed by the hypnotic condition, the nerves of touch, impressed

by the relief of the writing, printing or photograph transmitted to the brain of the subject extraordinarily delicate and precise impressions. Tactile sensations of which he was not conscious, but which were none the less real, responded to these impressions. We have shown elsewhere in our study of *cryptopsychy* the existence and importance of unconscious or subconscious sensations.

2. We must now suppose a more extraordinary fact still, to wit, that these unconscious tactile sensations evoke a whole collection of visual, auditory, motor and other representations, corresponding to the different letters of the alphabet, their combination into syllables, words, sentences, etc., and finally to the intellectual signification of all these things. But all this collection is developed in the subconsciousness of the subject; alone the intellectual signification, which is, so to speak, the resultant, will emerge in the consciousness properly so-called.

There will, therefore, be a certain analogy between the case of S. and that of blind people who read also by the finger-tips. In one, as in the other, the tactile sensations of relief evoke verbal representations. But this fundamental analogy conceals some very important differences. (1) The blind man must learn to read, and much time and labour is necessary for that. Lud. S. read from the first, or could have done so. (2) The blind man could account for the way in which he read and knows how he has acquired the faculty of reading. S. read without knowing how. Let us add that it is necessary for the blind man to have a special artificial relief, whilst S. seemed to perceive any natural relief whatever.

But, we may say, this explanation is only a hypothesis. Is it possible to verify it?

Every one, more or less, has heard of the original discovery of Colonel de Rochas, to which he has given the name of *externalisation of sensibility*. It is particularly

owing to this phenomenon of the externalisation of sensibility that we have been able to account to ourselves for the fundamental part played by touch in the subject's reading.

Let us briefly recall in what this phenomenon consists. The subject being put to sleep, not forewarned as to what will happen, the eyes carefully bandaged in order to avoid all simulation and suggestion, is then handed a glass about three parts full of water, which he holds in the palm of his left hand which is opened as wide as possible and over which he places his right hand. The operator makes several passes along his right arm and hand, and, after one or two minutes, he tests by pinchings or prickings the cutaneous sensibility of this hand. If the subject reacts, he continues the passes. A time comes when the subject no longer reacts; it is then sufficient *suddenly* to pinch a few inches from the skin in order to provoke very lively reactions. All this is done, be it understood, in the most perfect silence.

From the first time that I experimented with the externalisation of sensibility with Lud. S. under conditions which I have just related, this phenomenon was manifested with a remarkable suddenness and clearness. As it only, in fact, consisted in a particular modification of the sense of touch, which can be defined as "a cutaneous endo-anesthesia doubled by a tactile exo-hyperesthesia" the thought came to me that it would serve to verify whether the apparent second sight of S. did not arise in reality from touch. Assuming this hypothesis, all slight modification of touch ought to have its repercussion on this second sight, and the sense of touch being externalised, it ought also to be externalised, that is to say, exercised not on the skin, but at a distance of a few inches away. Would the experiment confirm this argument?

After having observed at the commencement of the séance that the subject had preserved his faculty of reading by the fingers under ordinary conditions, I proceeded to the externalisation of his sensibility according to

the arrangement previously indicated. When the right hand was placed over the glass it became insensible, pinchings made a few inches above the back part were, on the contrary, felt with great force. I took a sheet of paper on which a few words were written, and holding it in front of the right hand placed over the glass, three or four inches away, I slowly passed it along, in such a way as to make the lines of the characters come parallel with the position of the fingers. Immediately, without any indication on my part, these became agitated like the antennae of an insect, and the subject correctly read the written text. I began the experiment again, the glass was taken away, the hand simply placed on a support, and the fingers raised. The result was the same. I was able moreover to verify the phenomenon an indefinite number of times in subsequent séances.

It remained to be proved if this hand with the sensibility externalised, which perceived the writing at a distance, had lost at the same time, as reasoning suggested, the faculty of perceiving the writing by direct contact. Here again, the experiment confirmed the reasoning. The fingers of the externalised hand, pinched and pricked on the skin, did not manifest any sensibility; to make up for that, they showed themselves extremely sensitive to pinchings and prickings practised in the air three or four inches away in front of the tips. Similarly the subject could read when the paper was placed a short distance from his fingers, but he was unable to read when the paper was placed immediately in contact with them.

We are therefore, it seems, justified in concluding by all that has preceded, that we have under consideration a species of touch to which sight, strictly so called, is entirely unknown.

However, in the presence of such strange facts, a doubt still remained in my mind. As I had only hitherto experimented in light, would it not be possible that, in spite of everything, in spite of the closed eyes, in spite of the bandage interposed, the subject succeeded in helping himself by the assistance of some visual sensations? In order to dispel this doubt, it would be necessary to experiment in complete darkness.

The opportunity of making this experiment was eventually given me during one of the last visits which Lud. S. paid me. Until then he had usually come during the day. This time, in winter, he came as the night was falling. The window shutters were closed; the room was lighted by one gas jet only, on the Auer system, with an automatic lighter. It is needless to say that this experiment, like all the others, was conducted in absolute *silence*, that is to say that neither before, nor during, nor after, did I give any explanation or indication to the subject. After assuring myself, as I always did, that the subject had preserved his faculty of reading through the finger tips under ordinary conditions, I took some writing, of the contents of which I was ignorant, placed it in the hands of the subject, and at the very moment when he began to pass his fingers over it, I suddenly extinguished the gas. The subject read out aloud, just as he did in the light. The gas was re-lighted and I saw that the reading was accurate. I repeated the experiment with other passages under the same conditions; the result was always the same.

It does not, therefore, appear possible to doubt that the phenomenon presented by S. was exclusively, as we have said, a phenomenon of touch with which the sight was entirely unconnected.

Nevertheless, it is certain that the part of touch in the whole of the phenomena ought to be of much less importance than that of the brain. Would it be possible to make it the part of one or the other? For example, ought we to suppose a hyperesthesia of touch, a hyperesthesia in some way peripheral, determined by the hypnotic condition, which, bringing to the brain some sensations of an extraordinary clearness, enabled it to interpret them immediately as signs of verbal representations? Or, on the contrary, ought we to suppose that the touch preserving its normal sensibility, the hypnotic condition rather determined a kind of cerebral

or central hyperesthesia, which enabled the brain to isolate and intensify the impressions of touch and at the same time to make use of them as means for reading ?

If we admit the second hypothesis, it is necessary to suppose that not only a subject such as S. but also every normal individual, the first comer, running his fingers over a page of writing or printing or a photograph, etc., receives by the intermediary of the nerves of touch some absolutely distinct impressions, as distinct as those which the same objects make on his retina ; but which, for want of a special aptitude or disposition of his brain, he is actually incapable of perceiving and consequently of interpreting.

Evidently the first hypothesis is what the facts seems to suggest at the outset ; and yet experiment shows us that it is false and compels us to prefer the second.

Inspired by my previous researches on the "conductibility of psychical force" I had the idea of in some way adding to the subject a normal individual, the one representing the rôle of touch, the other that of the brain in the complete phenomenon, of which I should thus obtain the analysis.

The following is the manner in which I carried out this experiment. I began by placing two seats, one in front of the other, in the same direction, in such a way that the person seated on the first had his back turned to the person seated on the other. Then the subject being sent to sleep, his eyes bandaged, was seated on the second seat, I myself on the first. Then bringing my right elbow backward, I said to S. : "Extend your right arm, take my elbow, press it tightly." That being done I took at haphazard a newspaper from the table, unfolded it on my knees, and slowly passing my fingers over the title, I said to S. : "Read !" I felt the subject's fingers cling convulsively to my elbow, and as my fingers passed over a character, S. spelt it out loud, thus : "l, i, n, d, e, p, e, n, d, a, n, t, d, e, s, p, y, r, e, n, e, s, o, r, i, e, n, t, a, l, e, s." "What does that spell ?" I asked him.

"I do not know," he replied, "I have not paid attention." I again passed my fingers over the paper, but more rapidly, and he read without difficulty : "*L'Indépendant des Pyrénées-Orientales.*"

The phenomenon was so strange, so incredible, that in spite of myself, I suspected a transmission of thought. Suddenly turning over the newspaper and closing my eyes, I ran my fingers over the upper part of the fourth page. He then read : "Mineral waters," but I had had time to see this advertisement. At that moment I passed my fingers underneath and from the side. The subject read : "Automobile carriages." I opened my eyes and found this was printed there, unknown to myself, and that my hand had passed over it. A third person having come in, I asked him to place and direct my fingers over various advertisements taken at random on the fourth page, whilst I kept my eyes closed. S. read correctly each time. Since then, I have several times renewed this experiment of reading through the elbow.

Let us try to draw the conclusions which this implies.

1. What happened to me when, with my back turned to the subject who held my elbows, I ran my fingers over the printed characters ? Evidently nothing more and nothing less than what normally took place every time I did the same thing in ordinary circumstances. And yet the imperceptible relief of the characters must have made some distinct impressions on my tactile nerves, since that is the indispensable condition which enables the subject to read. Therefore, normally, apart from all hyperesthesia, the organ of touch is impressed by the smallest differences in relief which may exist in objects ; but these impressions, which must reach a certain quantum, are not perceived by our brain. Thus we find verified again, and in a more unexpected manner by this experiment, the well-known Leibnitzian theory of small insensible perceptions.

2. What happened to the subject ? Here it is certainly more difficult to see clearly. Our present knowledge of

physiology does not enable us to understand how his hand, in contact with my elbow, can receive through the muscles, skin and clothing the reaction of the vibrations or nervous oscillations which took place in a separate organism. There would be perhaps a phenomenon analogous to what is called in electricity a *taking of the current*. Possibly there are also developed in the tactile nerves of the subject induced currents which sympathetically reproduce the direct currents of another system. Be that as it may, these impressions which, reaching my brain are there absorbed in some way without leaving any trace, reach the brain of the subject and are immediately perceived there and interpreted, albeit in an entirely unconscious manner.

It would be interesting to study more in detail the mechanism of this communication between the subject and the operator, to determine, for example, the respective parts played by the different nerves of the hand and arm, cubital, radial, and medial. If ever the opportunity occurs, we have promised ourselves to push our researches in this direction.

However, we do not claim to conclude from the preceding observations and experiments that the transposition of the senses, such as the ancient magnetisers believe they witnessed, does not exist. In this class of research, it is necessary to guard against generalising *a priori*, particularly when there is a question of negation. Some facts, externally very similar, or even apparently identical, may be produced by causes absolutely distinct; and only a long and patient analysis, based not on argument but on experiment, can succeed in bringing to light their fundamental diversity. Thus, when a fact of this character is produced in certain circumstances by a certain cause, we have by no means the right to conclude *ipso facto* that it cannot be produced in other circumstances by a totally different cause. The phenomenon which we

have described will be observed perhaps with other subjects as a result of thought transmission or mental suggestion ; moreover, it may be obtained (although up to a certain point only) by a more or less skilful simulation, which we have ourselves called a trick. There may, therefore, exist also other processes, other mechanisms still unknown or not analysed, which enable it to be reproduced, in conditions altogether different.

We therefore limit ourselves to stating that, at least, in the cases studied by us, the transposition of the senses is only apparent, and that it really consists in a subconscious, supranormal interpretation of tactile sensations generally unperceived.

CHAPTER XIV

A CONTRIBUTION TO THE STUDY OF TELEPSYCHY

UNDER the general name of telepsychy, we include all the phenomena in which is manifested under one form or another, but always apart from any verbal suggestion, the influence which one human being exercises over another, at a greater or lesser distance. The phenomena of telepathy which have been collected in such great abundance by the Society for Psychical Research, are the best known species, but the category also includes many others. We shall here study three principally, which we have had the opportunity of submitting to observation and experiment in the course of recent years with the subject Ludovic S., whom we have already mentioned in the previous chapter. They are : (1) the phenomena formally described by magnetisers under the name of *magnetic rapport*; (2) the externalisation of sensibility; (3) the transmission of thought.

Before entering upon a description of these various phenomena, I would remind you once for all of the general conditions in which I have always experimented. They are the same as those already indicated in the chapter entitled : "A case of apparent transposition of the senses." In order to avoid all simulation and suggestion, I cover the eyes of the sleeping subject with a thick bandage which excludes all possibility of sight, and I impose on myself and on all spectators, if there are any, the law of absolute silence. In order that experiments of this character may have some value, it is necessary,

in my opinion, that throughout their duration, the subject should be *blind*, and the experimenters and spectators *dumb*.

I

The phenomenon of *rapport* consists in the peculiarity which some subjects display, while the hypnotic condition lasts, of only being connected with one person, *i. e.* the one that has placed them in that condition. In other words the subject that presents this phenomenon, hears his magnetiser and him only; every one else, so far as the subject is concerned, is as though he had no existence.

In my early experiments with Ludovic, I observed this phenomenon of *rapport*, at least directly a third person was admitted. This third person, having unexpectedly put a question to Ludovic S., we were greatly surprised to see the subject remain impassive, with closed mouth, as though he had not heard anything.

“Why do you not answer?” I asked the subject.

“I am answering you,” he replied.

“But just now,” I said, “you were asked a question; why did you not reply?”

“What question? I did not hear anything.”

Since then, whenever one or more persons were present as spectators at the experiments, I have invited them, either by sign or in writing, to speak to the subject and nearly always he appeared not to hear them.

Nevertheless, if when one of the company spoke to the subject I placed myself in contact with him, for example by touching his hand or shoulder, the subject immediately pricked up his ear, turned himself in the direction of the voice and replied. On the other hand, when the contact ceased, he again became deaf and mute with regard to this interlocutor but continued to hear and speak to me.

By what process is the subject enabled to know the exact moment when contact is established between the operator and one of the spectators and the exact moment when this contact ceases? That is a problem of which we have not yet had any solution. Let us not forget that the subject's eyes are bandaged, that the operator and his assistant are often a long way from him in a place where being very close to each other an imperceptible movement is sufficient to produce or suspend the contact.

Moreover, the phenomena should be identical with each other in all details. But, on the contrary, they are presented with great variations, of which it is very difficult to give any explanation.

Thus, certain persons—very few, it is true—can enter at the first outset into *rappo*rt with the subject without any preliminary contact with the operator. Others, once placed in relationship by a first contact, continue to be heard by the subject and to converse with him without the mediation of the operator afterwards becoming necessary.

In certain cases contact is not necessary; a certain proximity between the operator and the unknown interlocutor is sufficient. Everything happens as though there existed around the operator a sphere of influence with a greater or lesser extent of radiation. Persons outside this sphere do not exist so far as the subject is concerned; they become more and more perceptible as they approach nearer the centre.

I give here particulars of a very singular observation which I made:—

Mlle. J. D., who was placed very close to me, began to recite a piece of poetry out loud, whilst the subject appeared to listen with attention and interest; then, whilst continuing to recite, she gradually and noiselessly moved farther from me. In proportion as the distance increased the subject showed signs of astonishment

and impatience. "I cannot hear so well," he said, "why have you lowered your voice? Speak louder, you do not articulate, you whisper, I cannot hear anything more." But as Mlle. D. came towards me, the subject began to hear more distinctly. The results were the same when Mlle. D. and myself were placed side by side at the far end of the room, I moved thither and then she gradually approached towards me. The clearness of the subject's perceptions varied in some way in proportion to the distance which separated me from my assistant.

Time and opportunities were unfortunately lacking for further investigation of this study. It seemed that it might open up a way towards scientific knowledge of this force which is still so mysterious that for want of a better name we continue to call it animal magnetism. We catch a glimpse, in fact, in the phenomena which we have described, of the possibility of a clue; and it is by such a clue we know that science has definitely succeeded in becoming mistress of the various branches of natural phenomena.

Unfortunately the connecting thread is defective: I mean to say that the facts hitherto observed have not yet suggested the hypothesis which can serve as the starting point for a series of arguments and experiments. For want of an experimental hypothesis we grope indefinitely.

The majority of those theorists, a very small number however, who are concerned with the phenomenon of *rapport*, inspired with the opinions of the school of Nancy, think that they are able to explain it by suggestion. The operator, they say, suggests to his subject that he ought to be exclusively *en rapport* with the operator, that is to say, with the person who sends him to sleep. Failing this preliminary suggestion, the subject is immediately *en rapport* with the first comer.

It may be that things happen thus with certain operators and certain subjects; because it is always necessary in

these matters to guard against denying the results obtained by other investigators. But what we can affirm in regard to what concerns us is that we have never made any such suggestion. The exclusive *rapport* of the subject with the operator has always been established spontaneously and in some way unknown to us : it has been manifested in the most unexpected manner, at least, at the commencement, when one of the spectators himself questioned the subject. Similarly, all the variations of the phenomena and all their irregularities, so far as we have traced them, have always been spontaneous, not foreseen or wished for by us, and consequently independent of all suggestion.

We can, it is true, try to rescue the suggestion theory of *rapport* by presenting this phenomenon as the result of an auto-suggestion. The fact even of sending a subject to sleep implicitly suggests to him the idea that he ought to have regard to the operator, it is under the influence of this idea that he goes to sleep, and consequently it is quite natural that throughout the duration of his sleep he should be exclusively in relation with his hypnotiser. In this hypothesis, the subject in reality hears the words addressed to him by other people, but in virtue of his fixed idea, he excludes them from his attention ; prevents himself from perceiving them, or if we prefer the expression, he arrests the perception of them in his subconsciousness. This hypothesis is very ingenious and should contain, we think, a part of the truth ; but we do not think that precise experiments with a view to verifying it have ever been made. It seems to be contradicted by the cases of the subjects who, although they were sent to sleep under ordinary conditions, did not present the phenomenon of *rapport*, or else presented it with certain persons and did not present it with others, as we have ourselves observed ; unless we suppose that certain subjects, without knowing why, suggest to

themselves to hear this one and not that, whilst others suggest to themselves to hear no one except the operator. Unfortunately, it is too easy to avoid all difficulties by multiplying unprovable hypotheses. That is the favourite process of the partisans of suggestion at any price ; it is anything but scientific.

Even admitting that the subject has the subconscious perception of the words addressed to him by the persons with whom he is not *en rapport*, which appears to us probable and not difficult to verify, it remains to explain how it happens that the subject becomes conscious of these perceptions only when these persons are placed in contact, even for a moment, with the operator. By what mysterious sign is he advised of this contact, which he cannot see, and which is not accompanied by any noise ? Shall we say that in directing and concentrating all the force of his attention on the person of the operator, the subject thus acquires, in spite of the distance which separates them, a kind of intuition of the general condition of the nervous system of the operator ? But what idea can we have of this communication between these two nervous systems ? What idea at least that can be translated into the terms of a precise hypothesis, capable of being verified by subsequent experiments ? In any case this communication, if it exists, is only partial ; because, if it were complete, the subject would see and hear what the operator himself sees and hears, and consequently he would see and hear the other persons who are seen and heard by the operator. This hypothetical communication, therefore, although limiting the extent of the field of the subject's conscious auditive perceptions, would only have a direct bearing on the general tactile sensibility of the operator. In other words, the subject would subconsciously feel the contacts made on the operator, and this subconscious sensation would act to him as a signal to turn his attention towards

the auditory perceptions and would thus make these pass from the subconsciousness to the distinct consciousness.

Brought to this degree of relative precision, the preceding hypothesis would doubtless permit of contriving some special experiments to clear up the problem of the nature of magnetic *rapport*. It would be necessary before everything else to examine in what degree the tactile impressions of the operator are reflected in the subconsciousness of the subject. This once known, we could study the relations which may exist between these subconscious reflections and the variations of the subject's auditory perceptions.

II

The phenomenon of *externalisation of sensibility* discovered by Colonel de Rochas, seems to us to present a strong analogy with the phenomenon of *rapport*. An instance in illustration will be appropriate.

The subject being asleep and, we will add, by the application of a bandage, put in such a condition that it is impossible for him to see anything, we place, without giving him any explanation, a glass three parts filled with water in his hands in such a way that the glass rests on the palm of the extended left hand whilst the palm of the right covers the top a few inches above the water. The operator makes some passes over the hand placed above the glass, and, after a few moments, ascertains by contacts, pinchings, prickings, etc., the sensibility of the back part of this hand. If the sensibility remains, he continues the passes; but after a short time, from five to ten minutes, the subject no longer reacts. Then, without saying anything, the operator suddenly pinches in the air three or four inches from the skin, and immediately the subject shows by his movements, by a characteristic grimace, even by a cry, a very lively sensation.

The same thing would happen if the air was pricked in the same way. Further, if we take away the glass of water from between the subject's hands and remove it to a distance of several yards, all contact, pinching, pricking, etc., whether in the water itself or a few inches above it, being done in perfect silence, is immediately followed by a reaction of the subject.

I have made this experiment with a very large number of subjects. With Ludovic S. it was produced from the commencement, apart from all explanation, from all preliminary suggestion, with extraordinary clearness and rapidity. The only change which occurred in the evolution of the phenomenon is that the subject who lent himself to it, first of all unresistingly, being somewhat indifferent to this class of experiment, ended by recognising and dreading it because of the extreme intensity of the sensations which he experienced. He also ended by realising the part played by the water in this phenomenon. Spontaneously he became preoccupied by the idea of it, he was troubled about the treatment reserved for this water, and when I one day asked him the reason of this, he made me the following singular reply : "This water is myself." Sometimes, if the sensations experienced by him in what we may call his externalised sensibility seemed to be infinitely more acute than the corresponding normal sensations, they did not appear to be clearly localised. The contacts, pinchings, prickings, etc., seemed to be experienced not in any particular part of the body, for example in the hand, but in the whole of the body; and that is perhaps the reason for this extraordinary intensity.

This phenomenon of externalisation, evidently opens up an unlimited field for supposition and research. Failing time and sufficient facilities to arrange the subject according to our wishes, we have been compelled to confine ourselves to a small number of experiments. We have specially devoted ourselves to those which enabled us to determine the extent of the generality of the phenomenon.

Colonel de Rochas seems to have regarded the externalisation of sensibility as an exceptional phenomenon, which is only produced in certain subjects and which supposes even in these an altogether special condition. Our observations and reflections have, on the contrary, led us to conjecture that this is a general phenomenon, common not only to all subjects but even to all individuals of the human family, a normal phenomenon shall we say, but like many others doomed to remain *cryptoid*, whilst the conditions of its *development* in the sense that this word has in photography are not realised.

The following are two experiments intended to verify this hypothesis which I had already made with other subjects, and which, repeated with Ludovic S., gave me the same results :—

First Experiment.—After having put Ludovic S. to sleep and bandaged his eyes, I went a distance from him and took a glass half filled with water between my hands as though I wished to externalise my own sensibility. After holding the glass for about five to ten minutes I approached the subject, who, it should be understood, was quite ignorant of the preceding manœuvre. I made him hold the glass in the left hand and placed the fore and middle fingers of the right hand in the water; I went back again and placed close to me one of the spectators whom I had told in advance, unknown to the subject, what I wished him to do. Every time this third person pinched me, pricked me, etc., in any part of the body, the subject at once reacted with very great force. It seemed as though I was myself externalised in the glass, and as if all disturbance produced in my nervous system reacted along an invisible thread, starting from the glass of water, and terminating in the nervous system of the subject.

Second Experiment.—I proceeded first of all as in the previous experiment; but instead of placing in the subject's hands the glass of water where I was myself externalised, I placed it on a table by the side of one of

the spectators forewarned as already stated. I then approached S. and established a contact between us by taking his hand. Each time the spectator pinched, pricked, etc., the surface of the water, the subject reacted at the same moment with great force. Everything again happened as though the disturbance in the glass of water passed along an invisible wire to my nervous system, which however received no impression, and from there by a kind of conduct, on to the nervous system of the subject which received and translated the conscious impression.

The success of these two experiments gave me the idea of trying a third which would establish the possibility of artificially creating a communication of sensibility between the operator and the subject. The following was the method adopted :—

After having put the subject to sleep and bandaged his eyes, I placed between his hands the glass of water intended to receive his externalised sensibility, then I myself took a second glass of water intended to receive my own, and we thus remained, the subject and I, for a certain time, until S.'s sensibility was externalised. I then took his glass and my own and placed them on the table a few inches from each other. A copper thread covered with gutta percha, except at the two ends, had been made by me beforehand in the form of the letter U. I asked two spectators, in silence, to plunge each of the ends in the two glasses, one in each. This wire would therefore serve as a kind of conductor between the two recipients. This done I went and seated myself by the side of another person, also forewarned, unknown to the subject, of the part he had to play. S. was seated two or three yards away from me and we were each about three or four yards from the table on which the two glasses were placed. Immediately my neighbour pinched or pricked me the subject reacted each time with very great force. It seemed as though the disturbance produced in my nervous system was sent along an invisible wire up to the glass where I had externalised my sensibility, passing from there by means of the copper wire into the

glass where the subject had externalised his, and then was finally projected the length of a second invisible wire to the subject's nervous system.

However, at a given moment the subject ceased to react, although my neighbour pulled my hair above my forehead with very great force. I imagined this stoppage in the transmission of my sensations was due to the disappearance of the influence from the glasses, but on turning to the table I saw by the gestures of my two assistants that the real cause was something altogether different. One of them had played the joke of breaking the communication by withdrawing the end of the wire entrusted to his care from the water. He had thus, without wishing to, instituted a counter-proof of my experiment. When he replunged the wire in the water, the transmission recommenced. The plucking of the hair from my forehead was felt by Ludovic S. as a sensation of pulling out over the whole surface of his body; he also began to complain and protest and became impatient to have an end put to the séance. My neighbour then thought of having recourse to more pleasant impressions. He took one of my hands and several times caressed it gently. We immediately saw a smile on the lower part of S.'s countenance. "Oh, do that," he said, "as much as you like!" "Why what are they doing to you now?" "Caressing me." In the same way, S. felt at the same time the warm or cold breaths sent by my neighbour on to the back of my hands, but always under the form of diffused impressions in which the whole of the organism seemed to participate.

But the sensation of taste seemed to be transmitted under somewhat different conditions. As I had some sips of chartreuse, the subject simultaneously made some movements as though swallowing, and said to me: "What is it you have made me drink? it is very strong; I should say it was brandy." I again swallowed some sips, silently, as usual. Again a movement with the subject as of swallowing, and again the remark: "It is strong, but it is pleasant; is it not Malaga?" Without replying I again had some sips. The subject swallowed at the same time and called out: "Don't give me any more, it will get into

my head." I then said out loud that the experiment seemed to me to have lasted long enough and it was time to empty the glasses. The subject immediately rose and called out : " Yes, yes, where is my glass ? " and he took a step as though to go towards it : but he immediately fell full length on the carpet. The spectators and myself, somewhat alarmed I admit, hurried to raise him and made him sit down. I asked him what had happened to him. " I am tipsy," he replied. I hastened to take the bandage from him and awaken him. There remained no trace of his intoxication, no recollection, nor as I assured myself, any fatigue.

It would be interesting to resume these experiments by endeavouring to determine the part played by the glass of water in the phenomenon of externalisation, for example, by varying the elements of which it is composed, the nature of the recipient, the nature of the liquid, etc., as well as the surrounding circumstances.

III

In the course of my séances with Ludovic S. I observed some instances of thought transmission which, like the preceding facts, appeared to me to come within the general range of telepsychy.

I shall remain content with describing them without trying to give any explanation, because I do not see any hypothesis which will enable us to submit this class of phenomena to any regular tests. We can doubtless try to provoke them, but as we do so without any directing idea, and so to speak, by chance, the results we obtain are not real experiments and have only the value of simple observations.

We may add that we had not been successful in obtaining phenomena of this character with any other subject.

It was particularly during some experiments described in the chapter entitled "A case of apparent transposition of the senses," that we had had the opportunity of witnessing thought transmission on three or four occasions.

1. Ludovic S., with eyes bandaged and asleep, deciphered the first words on a post card by running his fingers over the text. The photograph of my correspondent was in the margin of the card. S. described this portrait after his fingers had gone over the surface. I then asked him if he knew this person. He told me "No," and as a matter of fact, it was very probable he did not know him in the sense that he had never seen him. "Give me your hand," I said to him, and he immediately gave me his hand. "I am thinking of the name of this person," I said: "What is it?" Almost immediately, in an interrogative tone, he said; "Monsieur S. L.?" It was correct. I ought to say that the name of this gentleman is very well known in the town where we live, although he only pays it occasional visits.

2. I placed a photograph in S.'s hands and asked him to describe it to me. This he did very correctly. "It is a young lady who has been photographed in a garden, because there is behind her some trellis work like we see on garden walls." "Do you know her Christian name?" "Not at all." "Give me your hand; I am going to tell it to you mentally." Almost immediately, in the same interrogative tone: "Jeanne?" Correctly guessed.

3. I placed a very large photograph in S.'s hands, under the same conditions. After having felt it he said: "It is a group of three young children." "Do you know them?" "No." "Pay great attention." "Ah, yes! they are your children but much younger." "Describe them to me." "On the left, the one eight years of age is your eldest son; the one on the right, this little boy of six years of age is your second son; in the middle is a little girl, four or five years of age, whom I do not know." "Why do you say it is a little girl?" "Because she has long hair." "You are mistaken, it is a little boy." "Ah,

yes!" "Where is he now?" "He is dead." "What was his name?" And in asking this question I took his hand. He immediately replied without any other indication: "Pierre." The answer was correct.

4. The last observation took place under somewhat more complicated circumstances. I had scarcely put S. to sleep when someone knocked at the door of my study. I was informed that someone I expected had arrived: it was my doctor, who had already gone up to the first floor. "I shall be obliged to leave you a moment," I said to the subject. "Wait, here is a magazine: there is an article there which will interest you; you can read it while you are waiting for me." S. took the magazine and began to read it by passing his fingers over the lines. I then went to find Dr. D., whom I had called in to attend one of my children who was ill. When the consultation was over, I asked him if he would like to see something out-of-the-way and, on his replying in the affirmative, I brought him into my study. We there found the subject still reading by means of his finger-tips. I said to Ludovic S.: "Well, this article seems to interest you." "Yes, monsieur." "Tell us what it is about." He began to give me a summary of it. I interrupted him by asking him to read the first lines aloud and he immediately obeyed. Then turning to Dr. D., who seemed very much astonished at this spectacle, I made a sign for him to speak to Ludovic S. But he did not respond any more than if he were deaf; he showed in fact, as we have said before, the phenomenon of magnetic *rapport*. Again on a sign from me the doctor interposed, but with no more success. Suddenly I touched the doctor while he was speaking. The subject started as though frightened. "Who is that? Who is speaking to me? Are we not alone?" "You are all right," I said to him, "it is one of my friends who came in with me, without attracting your attention." "Ah, he can boast of having given me a great fright." "Do you know him?" "Goodness, no!" "Give me your hand, I will think of his name." "Is it not M. Bianchon?" After a moment's thought I remembered that that was the name of a person he had previously seen in my study and who had been present at some of my experi-

ments. "No," I said to him, "do not try to guess; listen rather to what I am thinking." "I cannot distinguish very well, it seems to me that I hear Ort, Ort, Ort." "Listen attentively: I will think one after the other the two syllables of the name: here is the first . . . here is the second. Now?" "I am not sure if I heard correctly?" "But what did you hear?" "It seemed to me that the first syllable was *Du* and the second, *sort*. Is that what it was?" "Yes, it was in fact, Dr. Dussort."¹

Such are the principal facts of thought transmission, or, as we sometimes call it, mental suggestion, which we have observed with Ludovic S., the number of which could doubtless have been increased if we had been able to have this subject longer or more frequently at our disposal. They are doubtless sufficient to show, as well as the other telepsychical facts previously studied, the radical insufficiency of explanations based on suggestion alone in all these phenomena and the necessity of admitting in some measure or under some form, the existence of a force more or less analogous to the radiating physical forces which serve as intermediaries between the nervous systems of human beings.

¹ For reasons which will be understood, the names have been altered, but our account otherwise strictly conforms with the facts.

CHAPTER XV

THE EXTERNALISATION OF SENSIBILITY

WE know that Mesmer attributed the singular results produced in a large number of persons by a fixed gaze, passes, imposition of hands, etc., to an influence emanating from the human body, of the same nature as that emanating from the magnet; hence the name of *animal magnetism* often given to his theory. Braid thought to negative this hypothesis by his discovery of hypnotism; from the moment that we can send a person to sleep by physical processes alone, for example, by causing him to fix his gaze for a certain time on a brilliant point, it would seem by no means necessary to suppose that the eyes, hands, etc., of the operator emit any fluid whatever. His conviction is shared by all the savants who belong to the School of Paris. Without admitting the same explanation of hypnotic phenomena for which suggestion, that is to say the imagination, appears to the School of Nancy to be the unique and sufficient cause, they also refuse to admit any analogy between these phenomena and the results produced by the magnet or by electricity; perhaps even, in this respect, going further in their imagination than the rival school.

However, a certain number of investigators have remained convinced that Mesmer's hypothesis was only the foreshadowing of a great truth and they endeavour to give it experimental verification. Amongst those of our own contemporaries who have most contributed to the

advancement of the solution of the problem is certainly Colonel de Rochas.

In order to prove the real objective existence of the magnetic influence, we can doubtless employ several methods. Colonel de Rochas seems to have resumed and perfected the method invented by Baron Reichenbach, the celebrated German chemist, who, at the outset, averse to Mesmer's ideas, was in a measure forced by the facts to return to them. This method consists in utilising the superior sensibility of certain persons (those known as sensitives or subjects) for the perception of magnetic effluvia. This is subject to a very grave objection: we are compelled to believe the statements of the subjects when they give an account of their impressions; but every subject from his very nature is, more or less, apt to submit to suggestions or to suggestionise himself. Hence when a subject assures us that he sees blue or red effluvia, we may always ask if these perceptions are quite real, or if they have not unconsciously been suggested to him by our questions, and even if they are not the spontaneous results of his imagination. However, the difficulty is not insurmountable and Colonel de Rochas has very ingeniously overcome it. The whole of the first chapter of his book¹ which he has devoted to this subject contains the exposition of a series of experiments intended to prove the objectivity of magnetic effluvia, and may be given as a true model of the experimental method in a class of research where there cannot be too many combined efforts of the physicist, physiologist, and psychologist in order to arrive at the discovery of the truth.

The following is the summary of these experiments which have been principally made on the effluvia from electro-magnets and magnets.

“ 1. By means of the electro-magnet we can give birth to, or suppress, or invert at will, unknown to the subject,

¹ *L'Extériorisation de la sensibilité.*

the magnetic poles of soft iron-stone : not only do the descriptions of the effluvia perfectly agree with the operations in the twenty-two experiments carried out, but the subject himself verifies the passing of the current at the moment the operator believes he has suppressed it. With a steel stone, which the subject could not, however, distinguish from iron-stone, some effluvia described at the moment of the passing of the current still persisted afterwards.

“ 2. The tips of the fingers and the poles of a powerful magnet when placed in front of the opening of the spectroscope, can reveal some very clear colorations ; we prove that the description of each coloration exactly agrees with the position of the eyepiece which alone can admit into the field of vision the corresponding luminous radiation ; we also prove that the subject does not see anything when, unknown to himself, we remove and turn away from him the opening of the spectroscope.

“ 3. The common axis of two nicols is directed over the poles of a large magnet ; taking the necessary precautions that the area should contain nothing beyond a dark background, the subject sees this area lighted in blue under the north pole and in red under the south pole. If we turn the polariser or analyser, the subject describes very clearly and without any hesitation, some variations in the intensities of these lights, and we notice that the positions of the maximum and minimum described exactly correspond to those which result from the laws of polarisation. If the apparatus is turned from the direction of the poles, the subject sees nothing.”

These experiments were conducted by two operators whose duties were clearly separated, the one being solely engaged in placing the subject in the suitable condition ; the other, without undertaking the hypnotic part in any way, executing the operations (magnetising by a current,

refraction and polarisation of the light, etc.) unknown to the subject and also to the first operator.

In order to eliminate the influence of suggestion, no word capable of influencing the subject was said in his presence, either when he was in the waking state or in the hypnotic condition.

Finally, the subject presented this remarkable peculiarity, that he could draw and paint at the very moment of the observation and according to their nature, the results which he said he saw.

Under these conditions the objectivity of the effluvia does not seem open to dispute.

We may, however, remark that the experiments were specially directed towards the effluvia of magnets and electric currents and merely incidentally on effluvia from the hand. Whilst wishing that Colonel de Rochas had done methodically for this last what he has done in the former case, he nevertheless does seem to have established by these experiments that the hand emitted effluvia exactly similar to those of the magnets and currents.

That is a fact of considerable importance, because, once well established, it proves, contrary to the assertions of the School of Nancy and the School of Paris, that the magnetic agent exists in the human body. From that there is but one step to make in order to conclude that this agent intervenes in the majority of the phenomena hitherto attributed exclusively by these schools to hypnotism and suggestion, and this step, we believe, science, under the pressure of facts, will end by taking.

But if we do not take the precautions necessary to exclude it, cannot suggestion always interpose its effects with those of the magnetic agent? Colonel de Rochas is so far from denying it, that he instituted a series of experiments expressly intended to verify this influence of suggestion, and he drew the following conclusions: "It is absolutely indispensable to show nothing in front of the

subject, by words or acts, which can influence him in his descriptions, and this care must be taken whether he is in a state of waking or apparent lethargy." It is the failure to observe scrupulously these precautions that caused the partisans of magnetism to become the sport, so to speak, of their adversaries. If they had always bound themselves to this rigorous method, the question of animal magnetism, which is still disputed and even denied by the majority of savants, would have been definitely solved by the facts long ago, which evidently prove, when we know how to question them, the truth of the mesmeric hypothesis and the grave mistake made by the exclusive partisans of suggestion.

But to speak frankly, we regret that Colonel de Rochas, in the chapter headed "Externalisation of Sensibility," should have departed, or appear to have departed, from the rigour of the method which he has so admirably applied hitherto. Certainly we are convinced of the reality of the phenomenon which he first observed and described under the name of externalisation of sensibility; we have ourselves reproduced and witnessed it under conditions which leave no doubt in this respect; but we also know that, in a large number of subjects and in many circumstances, suggestion—if we do not take care to shut the door against it—will glide into this phenomenon either to complete it and even sometimes to simulate it, unknown to the operator and the subject.

This is why we wish that efforts had been made to obtain it in the condition of absolute purity, as even though it might be made to appear less precise, less perfect to the eyes of the superficial observer (as unfortunately nearly all those are who are called in to verify and check the experiments of savants who, on the contrary, are specialists in this class of research), we should, at least, be sure of knowing very exactly in what

it consists, and how far the externalisation of sensibility takes us when all foreign elements have been abstracted from it.

The science of these extraordinary facts, whatever may be the name given to it in the future, appears to have already gone beyond the period of observation and approximate experiments, and it is just such works as those of Colonel de Rochas which are the principal cause of this progress. We can no longer, like the ancient partisans of animal magnetism who scarcely suspected the power of suggestion, remain content with the "nearly" instead of proofs. This rigour is all the more necessary when the sceptics are legion. The duty of those who study these phenomena with the well-established conviction that they are real, is to forestall all objections and criticisms; it is for them to multiply and increase the precautions in the certainty that they will only serve to bring the truth to light. With this reservation we can but point out to the reader that all these interesting and new facts reported by Colonel de Rochas in the second chapter of his work are well worth his most serious attention.

The chapters which follow and which are entitled "The Power of Fascination," "The Magnetic Healing of Sores by Transplantation," and "The Theories of Maxwell," do credit to the extraordinary erudition of Colonel de Rochas, and are of very great historic interest, but we fear that they will rather do injury in the minds of the majority of the readers, to the impression which this work ought to leave upon them. Will they not lose sight of the methodical and scientific character of the author's researches while noting the frequent extravagance or fabulous strangeness of the legends and anecdotes which he inflicts upon them? Doubtless, as he himself declares, he "would not too strongly insist on the reality of the facts contained in the accounts which he reports; he is

simply the chronicler of a tradition (*à propos* of Fascination) which, by its persistence and universality, is, at least, worthy of attracting the attention of those who study the progress and aberrations of the human mind ;" but it is no less true that all those who are indifferent or hostile to this class of research do not see, or do not wish to see, his declaration, and display the same incredulity for facts, patiently observed and scrupulously tested, which are reported in the earlier chapters, as for the improbable and unverifiable stories of the later.

Such as it is, his book brings the proof of a truth, of which we cannot exaggerate the importance, and which will entirely transform the disturbing problems, as Colonel de Rochas calls them, of the existence of the soul and the nature of its connection with the body. "Hitherto," he adds, "philosophers have surveyed this question from the metaphysical side : I try to reach it from the experimental." The results he has already obtained lead us to hope that he will throw still further light by his works on this obscure question of psychical and moral connections, which calls ever with more and more insistence for the consideration of contemporary science and philosophy.

CHAPTER XVI

THE EXTERNALISATION OF MOTRICITY

IN the previous chapter we analysed the work of Colonel de Rochas on the externalisation of sensibility. From the whole of the facts which are there reported we seem to arrive at the conclusion that there exists in the human body a force capable of radiating at a distance, of projecting itself to a greater or lesser extent, and that it is this force which is the vehicle of sensibility in the nervous system, which transports to the cerebral centres the impressions received at the periphery of the organism.

Pursuing these researches in the same direction, but taking up another line of argument, de Rochas¹ has proposed to prove that the force which in the nervous system is the instrument of motricity, which carries to the periphery of the organism the impulses coming from the cerebral centres, and which is doubtless identical in essence with the preceding, can also be externalised at more or less considerable distance and produce movements and displacements of material objects. In either case it is the experimental verification of the mesmeric hypothesis of animal magnetism, to which official science still to-day opposes only systematic negations, or, what is worse, the indifference and silence of prejudice.

The fact that Colonel de Rochas claims to establish in a special manner in this work, according to the definition he himself gave is, "the setting in motion, without contact, of inert objects by means of a force emanating

¹ *L'Exteriorisation de la Motricité.*

from the organism of certain persons," and the experimental proofs of this fact are divided by him into two groups: the first contains the experiments made with Eusapia Paladino, the most recently recorded of which were those witnessed in 1895 by Colonel de Rochas himself at Agnélas, in company with Dr. Dariex and several other experimenters; the second reports the earliest observations and experiments, particularly those of Count de Gasparin in 1854, that of the Dialectical Society of London in 1869, those of Sir William Crookes, the experiments conducted with Slade, those of MacNab, Pelletier, Dr. Paul Joire of Lille, and, finally, the cases of electric women and those of haunted houses where the same force appears to be manifested.

We cannot here go into a detailed examination of all the phenomena of which Colonel de Rochas' book contains the most minute enumeration: we can only notice two which seem to be typical, and which we borrow from the account of the experiments at Agnélas.

"Eusapia, who had her feet and hands tied, said that she was going to withdraw the key from the cupboard placed on her left, too far from her to enable her to reach it either with her hands or feet, without leaning over considerably. Moreover M. de Watteville was placed between the medium and the cupboard, so that the medium could only reach the cupboard by passing by M. de Watteville or even by pushing him. Besides the light was sufficient for us to see clearly if Eusapia extended one of her limbs towards it. Immediately we distinctly heard the key move in the lock, but the key, badly placed, refused to come out. Eusapia took M. Sabatier's left wrist in one hand, and with the fingers of the other took hold of his first finger. She produced around this finger some alternative rotatory movements which corresponded with the noise made by the key turning in the lock, sometimes in one direction, sometimes in the opposite.

“A few minutes later Eusapia seized the hand of M. S., who was sitting to the right, in her own hand, and made jerking gestures backwards and forwards as though opening the door of the cupboard which was placed at her left about a yard away and behind M. de W. Immediately the door of the cupboard moved and gave some jerky and noisy movements like those of a door, which is forced open, but which resists, the lock not being undone. At this moment M. de W. asked if it was not the moment to remove the key from the cupboard, Eusapia being able to turn the key in the lock but not to open it. His request being confirmed by the observers, M. de W. turned the key which set free the door of the cupboard. Then, on a new gesture from Eusapia, the door opened, Eusapia, leaning towards M. S., who was on her right, placed each of her hands on the corresponding cheeks of M. S. Her feet were firmly held all the time, the right by M. S., the left by M. de W. Eusapia struck her two hands in turn on M. S.’s cheeks, the door of the cupboard alternately opening and closing in harmony at the same time. At the first blow on the cheek it opened, at the next it shut. The hands were clearly seen and felt, the movements of the door were also seen and heard, because the door in opening struck against M. de W.’s chair, who was sitting in front of the cupboard (between it and Eusapia) and close against it. The movements of the door corresponded in vivacity to the movements of the hands. After a certain number of blows thus struck, Eusapia suddenly pushed M. S.’s head towards the cupboard and the door was violently shut.”

The second phenomenon is not less significant than that of which we have just read the description and which seems to us to have been observed under quite satisfactory conditions.

“On the drawing-room table which was about a yard long, was placed towards one end, a heavy petrol lamp giving a beautiful clear light and provided with a white muslin shade. The table was brilliantly lighted: it was about half past-six. We went to dinner in the dining-

room which was at the side. Eusapia was in a normal condition, not in a trance.

"There were present Messrs. de Rochas, Dariex, Sabatier, de Grammont and de Watteville.

"M. de G. asked Eusapia if she felt capable in her normal condition and in full light, of acting by the simple placing of her hands on the plate of a letter-balance which was in his travelling trunk. Eusapia replied that she knew nothing about the experiment but was disposed to try it. The members of the committee expressed the desire that such an experiment should be made because its improvised character did not give rise to the suspicion of any preliminary preparation of a trick, and its success would in their minds dispel many doubts. M. de G. went to look for the balance in his room on the first floor and the instrument was placed on the table about thirty inches away from the petrol lamp, in such a way that observation could be made very easily by all the spectators. The scales were furnished with a plate and counter-weight placed at the end of a bent lever. The movement of a long needle indicated the weight corresponding to the degree the plate was lowered. The lowest point to which the needle could go showed a weight of fifty grammes placed on the plate. Eusapia stood up close to the end of the table where the scale was, the needle of which marked O. Messrs. de Rochas, Sabatier, de Grammont, and de Watteville were placed around the table and watched the plate and hands of Eusapia very attentively. Eusapia first of all tried unsuccessfully to make it move by placing one hand only a few inches over the plate. Then bringing to a point the fingers of each of her hands, she placed them one to the right the other to the left of the plate and concentrated her will on this point. The finger-tips of each hand were about one and a half inches at least, away from the edge of the plate and were absolutely free from contact with it. Eusapia made some feeble movements with her hands up and down. At the commencement the plate was motionless; presently it oscillated on several occasions, synchronising with the hands. Finally, Eusapia, having lowered her hands, the plate came down to its

full depth, that is to say to the extreme point of its descent and then re-ascended. During this time the medium had made no other movement with her hands, and the table, firmly wedged, had been in no way shaken.

“Immediately afterwards, under the same conditions as regards lighting, the experiment was recommenced. Dr. Dariex, who had not been present at the first, came and added his control to that of the other four observers. The result was the same.

“Moreover, in the presence of the same observers, the experiment has been repeated with new precautions. In order to make sure of the movements of the hands and keep them at a distance from the letter-weight, M. Sabatier was placed behind the medium, and passing his arms each side of the medium’s waist, held the right hand of the medium with his right hand, and her left hand with his left hand, enclosing each in his fingers and only allowing a small portion of Eusapia’s finger tips to show joined in a point. Moreover, by bending slightly to one side both the letter-weight and the hands could very clearly be seen by him. Under these conditions he accompanied the movements of the medium’s hands and assured himself that they moved in a vertical direction, without inclining towards the letter-weight or coming in contact with it. The letter-weight was again lowered to the bottom for the third time, and none of the observers could detect the slightest contact.”

Two or three well-attested facts, such as those of which we have just read the account (and which we have reproduced exactly), are of much greater value as decisive, definite proof of motor action at a distance than hundreds of more or less doubtful observations with which it is always possible to find fault.

We do not, indeed, see what objections the most incredulous persons can advance against these experiments, particularly the second.

We know that the Cambridge experimenters thought they discovered, let us even say that they did discover,

attempts at fraud in some séances with Eusapia, who tried to take away one of her hands from their control and made some more or less suspicious movements in the direction of the objects it was desired to move. Admit that this was so; have we the right to conclude that the facts observed by Colonel de Rochas and his friends, under conditions such as we have seen, lose all value as proofs and are not worthy of being taken into account? This method of discussion is really too summary. It is, however, that which the partisans of the scientific *status quo* will most likely apply to the new researches of M. de Rochas, as it was indeed applied to ourselves, when giving an account in the last *Année psychologique* of infinitely more modest experiments on the action exercised at a distance by an operator on a subject, when it was simply remarked that it would be well to add to such investigations the help of a professional conjuror. But there is a more summary method still, the cruelty of which we hope Colonel de Rochas will not have to suffer: that is the pure and simple suppression of all discussion by feigning to ignore the researches made and the results obtained. Adverse critics remain content with stating each time that opportunity presents itself—and this opportunity they even hinder from arising—that facts of this character have never been observed in a sufficiently scientific manner. It must be recognised that the verification of these facts is surrounded with particularly formidable difficulties.

We do not wish to speak here only of voluntary or involuntary trickery, to which mediums, whether genuine or fraudulent, are suspected of resorting, and against which we cannot take too rigorous precautions: but let us suppose the question is of real, genuine, authentic facts. As they are now presented to us, these facts appear as rare and exceptional accidents, essentially capricious, connected with the presence of a certain individual, such as

Daniel Home, Henry Slade or Eusapia Paladino, and we cannot be certain that they will always be produced even when these individuals are present, and place themselves in the same conditions in which we have already seen the phenomena produced. Savants accustomed to experiments with physics and chemistry require from facts of nature that they will always be available, always ready to respond to the call of the first experimenter who places himself in the requisite conditions; they challenge the phenomena which they can only observe under the conditions of sending at great expense for a certain subject from England, America or Italy who has the power of producing them, not constantly, but when he is found in a favourable condition. It is not given to everybody, says an ancient proverb, to go to Corinth. We can say the same; it is not given to everybody to go to Carqueiranne or Agnélas. Hence the necessity for all those who have not been present at these experiments to know them only through the evidence of a small number of privileged observers, and to give credit to their reports if they do not prefer to suspect either their veracity or their intelligence. The criticism of witnesses, which is properly the method of history and of the erudite sciences, is thus substituted for the method of experimental science, that is to say, for the direct observation of facts and their artificial reproduction.

It even seems in regard to this that the facts specially studied by Colonel de Rochas in the present work are in a yet more unfavourable condition than those which were the object of his previous book, or than the ordinary facts of suggestion, hypnotism and animal magnetism. These, if they cannot be obtained with every human being, are such as can be obtained successfully with a relatively large number of persons; it is, therefore, sufficient to experiment to a fairly large extent in order to be certain of observing them; and although their

conditions cannot be perfectly known to us, we know enough of them to be able to provoke them at will with suitable subjects.

All this, doubtless, is true, but it does not prove that we ought not to study this particular order of facts and that those who apply themselves to this study have insincere and unbalanced minds. On the contrary, we should be all the more grateful to them for the efforts they have undertaken in the face of such grave difficulties.

Let us preserve ourselves from thinking as certain savants seem to do, that two kinds of facts exist in nature, scientific facts and those which are not scientific, the first alone worthy of being studied, the second heretical and excommunicated, to be regarded with indifference or contempt. A fact in itself is not scientific—it is real, natural, or it is nothing. It is we who make it scientific when we have learned how to discover its properties, relationships and the necessary and sufficient conditions for its existence. For some kinds of facts the work which is incumbent upon us is found comparatively easy, for others it bristles with difficulties of all kinds; but the latter are neither more nor less scientific than the former.

The whole question therefore is to know if the facts which Colonel de Rochas relates to us actually exist. If they do, we ought to take them as nature has given them to us. Why should nature be compelled to subject itself to our convenience and bow to our comfort? Can we observe or reproduce at will all astronomical phenomena—for example, the transit of Venus across the sun? Rare or frequent, exceptional or usual, capricious or regular, a fact is a fact; it is for us to study and discover its law. When this law becomes known, what appears to us to be rare, exceptional, or capricious will become frequent, usual, and regular.

Colonel de Rochas has therefore every right to vindicate the legitimacy of his bold researches in this still unknown world which he has set himself to conquer for science, and we can only sympathise with the sentiments that inspired these noble words : " To refuse to study certain phenomena when we are convinced of their reality, for fear of what will be said, is at once to lower oneself by showing a contemptible weakness of character and to betray the interests of all humanity. No one can, in fact, foresee the consequences of a discovery when it turns on new forces : that which a hundred years ago only manifested itself by the contraction of frogs' legs hanging up on Galvani's balcony, has it not been the marvellous source of motion and light which, to-day, animates our most powerful locomotives and illuminates the coasts of our continents ? "

PART IV
SPIRITOID PHENOMENA

CHAPTER XVII

TWO SÉANCES WITH EUSAPIA

ALTHOUGH he is scarcely forty-five years of age, my friend Charles R. is already a well-known savant; professor of physiology in one of the greatest European universities, he could, like many others, have remained in the peaceful seclusion of official science; but he has an ardent soul, a curious mind, which the unknown attracts: thus he goes boldly forward into all mysteries, ready to raise the veil which covers them, without anxiety as to the astonishment which he sometimes excites among his colleagues, without fear of the ridicule which the foolish heap upon him.

“Would you like,” he wrote to me during the month of December 1897, “to be present at a séance with Eusapia Paladino? I am going to experiment with her on Saturday evening. You will meet at my house M. of Cambridge and F. of Geneva. I expect many experiments to be made with such observers.”

You may judge with what eagerness I accepted the invitation. On the following Saturday I went by the express to the Gare de Lyon, and thence to the old monumental hotel in the Faubourg Saint-Germain where my friend resided. At ten o’clock we met together in his large study, the high ceiling like that of a cathedral, large windows draped with heavy tapestries, the walls on all sides covered with books.

In addition to the two savants whose presence had been announced there were also two very intimate friends of our host, M. de X., French Ambassador to a great foreign

Power, and his charming wife. We were not kept waiting long for the arrival of the medium.

A well-set woman, Eusapia appeared to be about forty years of age. Her energetic head, with piercing eyes—the real Roman Empress's head—was crowned with black hair showing a white lock on the right side. I was the only one of the sitters whom she did not know; so she regarded me first of all with an air which I thought a mixture of apprehension and suspicion. But she soon became at home with me. There, too, was prepared for the séance a kind of shelter wherein was to be condensed, out of reach of the light, the mysterious force emanating from the medium. It was simply a recess of one of the deep windows of the study, the last nearest to the wall on the right side; we placed there a footstool, on which was a plate filled with flour, which after all was of no use, and a zither; then we allowed the two curtains to fall back. With her back turned to this sort of improvised chapel, Eusapia seated herself about four inches away from the window, and we placed an ordinary kitchen table in front of her.

We all took our places around the table with the exception of our host, who was engaged in regulating the light and who noted the incidents as they developed. I was at the right of the medium, Mr. M. was on her left, and we each held one of her hands, the other spectators made a chain with us, as in the ordinary spiritistic séances. We conversed very freely, Eusapia seemed very desirous of convincing Mr. M., who, after having seen and believed at the Ile Roubaud, had allowed his faith to be shaken at Cambridge, when Mr. Richard Hodgson had succeeded in persuading all his colleagues of the Society for Psychical Research that they only had before them a rather clumsy fraud. By degrees her condition changed, she became more taciturn, more nervous; and a kind of hysterical hiccough frequently shook her chest. At the same time the table moved under our hands; it was agitated, three of its legs rose from the floor and thus it remained for a few seconds in uncertain equilibrium, although we leant all our force upon it without succeeding in making it fall back. Professor F. was invited by Eusapia to take

a piece of her gown in his hand ; he soon declared that he felt in this some movements exactly similar to those of an imprisoned animal. The light, the brightness of which seemed to affect the sensitiveness of the skin of the medium, had been gradually lowered ; we could, however, clearly distinguish the light bodice of the medium and her head, on which a white handkerchief had been placed. Her feet and knees were at first held by our host, later by Mr. F. ; Mr. M. and I assured ourselves, by repeated proofs, that we each held a different hand.

It was then that Eusapia raised her left hand which was imprisoned in that of Mr. M., moved it, without turning herself, in the direction of one of the curtains and made a gesture of appeal : "Come," she said with an effort, "Come," and she breathed heavily, as though in great pain.

Marvellous ! We saw the whole curtain blown out as though by a breath from within and come towards the medium. It was now the turn for my hand to accompany Eusapia's right hand. This time the curtain on my side seemed as though brought by a tempest down upon my shoulder and forehead, partly covering the table, not without unpleasantly grazing my right eye in passing. Almost immediately, I felt myself touched on my right shoulder, whilst I had firm hold of Eusapia's hand with my left hand. There were two successive contacts, and in the second I distinguished the impression of fingers as well as a thumb. The same phenomena were rapidly produced at the side of the other controller.

The lower part of the two curtains now covered Eusapia's and our shoulders and came down over our arms and hands on to the table.

Mme. de X. rose, passed her hand, not without a certain apprehension, behind the curtain close to the wall, she seized and held the zither, but almost immediately she uttered a cry of fear, because (as she declared) she felt a hand touch her ; she let the instrument fall and we all heard its strings vibrate.

We begged her to pick up the zither and show more courage. She had scarcely passed her hand behind

the curtain again when she declared she still felt the contacts. "Some one is pulling it," she cried, "it is being taken from me," and there was the zither which, as a matter of fact, escaped from her hands, passing between the opening of the two curtains above Eusapia's head and placing itself gently between the medium's two hands which were held by Mr. M. and myself.

I gave up my place to another controller, Mr. F., and I heard the spectators speak from time to time of sensations of unexpected contacts. Mr. M. with one of his hands held Eusapia's hand, and with the other held the nape of her neck. On several occasions the hand which was on her neck was alternately pinched and caressed. Mme. de X. placed her hand on the curtain; she met with resistance and sometimes also she felt a hand pressing hers. I rose and went to place my hand on the curtain to the left of Eusapia, about eight inches, at least, above her head which I saw very distinctly; at the very moment when my hand touched the curtain, it was forcibly pushed back as though from a blow which came from another hand from behind.

But it was already late, close on to the morning.

The medium seemed to be terribly fatigued. We broke up the sitting, arranging for another meeting on the following Monday. Mr. M., who was compelled to return to England, bade us adieu; he left, convinced of the reality of the phenomena of which we had been witnesses.

The Monday's séance was much shorter, it lasted scarcely two hours; the phenomena were less frequent, less varied, and less dramatic, but they had the immense advantage of taking place in a light sufficiently strong to enable all the spectators to distinguish quite clearly all the movements of the medium. At no time did we lose sight of her head or hands, so that if necessary, we could have dispensed with holding her as we had done. M. Camille Flammarion, the well-known astronomer, and M. Ad. Brisson, editor of *Le Temps*, and director of the *Annales Politiques et Littéraires*, had charge of the control. They each took precautions to ensure its being absolutely strict and the medium submitted to all their demands. Each of them held under his heel one of the medium's feet, imprisoned,

so to speak, against one of the legs of the table, and at the same time held one of the medium's hands placed on the table, and moreover clearly visible to all the spectators.

The first phenomenon produced by Eusapia consisted of raps struck on the interior of the table without apparent contact. Taking and raising in her hand, the hand of one of her controls, she made a gesture of sending a blow towards the table, then a second, then a third, and each time it seemed as though we heard a sonorous drop on the table. After that, I again saw the curtains turn aside and move at the beckoning of her hand, always accompanied by the hand of the control; but this time without abruptness or violence. On two occasions, M. Flammarion felt himself touched very strongly, it seemed to him on the hip and leg; but, despite all his desire, he could not obtain the displacement of any of the objects, zither or tambourine, which had been placed behind the curtain. At this point the medium became visibly indisposed, and the most elementary prudence prevented us from further proceeding with the experiments which might have seriously endangered her ^{health.}

These are the facts of which I was a witness. I do not undertake their explanation.

CHAPTER XVIII

SPIRITISM REGARDED AS DOCTRINE

WE can see in spiritism a collection of facts, all more or less mysterious, all more or less strange, which require to be scientifically observed and controlled, until we can succeed in explaining them by laws already known, or until their study may enable us to discover laws still unknown. This, in our opinion, is the only way of regarding it if we are to secure its admittance into science.

But there can also be seen in it philosophical, moral and religious doctrines which claim to supplant the ancient systems and dogmas, and eventually to bring decisive solutions of all the great metaphysical and social problems. Thus understood, spiritism has nothing to do with science, and (is it necessary to say it ?) it does not offer to the philosopher anything more than a very mediocre interest, because it is easy to recognise in it a confused mass of hypotheses borrowed from all the old idealistic, spiritualistic and mystical schools, with this aggravated circumstance, that they do not offer themselves to us as human opinions, the authors of which we can know and criticise, but as supernatural revelations emanating from invisible and irresponsible beings.

Dr. Gyel in a recent work,¹ despite his scientific claims, takes the second point of view. Spiritism is for him, "a philosophy at once very simple, very clear, and very beautiful," and even, he adds, with admirable candour : "How far below spiritism in all respects were the philosophical systems which have haunted us for so long a

¹ *Essai de revue générale et d'interprétation synthétique du spiritisme,*

time!" Is it quite certain that he knows these systems otherwise than by hearsay? If he took the trouble to study at first hand the works of a Plato, a Plotinus, a Leibnitz and many others, he would perhaps be quite surprised to find there under forms of incomparable beauty, these same doctrines which already charm him under all the poor grotesque make-up of spiritism.

In this book we must not look for any attempt at criticism, but, if it is desired to have a complete exposition, faithful if brief, of spiritistic opinions, it will be satisfactorily found there.

The work, which runs scarcely to one hundred and thirty pages, is divided into four parts.

The first deals with the spiritistic doctrine, comprising the indissoluble union of matter and intelligence; their progression and continuous evolution; whence the necessity for each soul of an indefinite series of incarnations and discarnations, and the existence of an intermediary between the soul and the body, the *perisprit* or *astral body*, which ensures the preservation of the individuality through all its metamorphoses.¹

In the second part he enumerates the various spiritistic facts (movements, raps, automatic writing, *apports*, materialisations, etc.), and there are indications of the general conditions in which they occur, as well as the names of those who have studied them—Sir William Crookes, A. R. Wallace, Zöllner, de Rochas, etc.

The third part, under the name of "indirect proofs," contains a series of considerations intended to demonstrate the agreement between spiritism and all the sciences, astronomy, physics and chemistry, the natural sciences, physiology, pathology, etc., etc.

Finally, the fourth part enumerates the moral, religious and social consequences of spiritism.

¹ Presumably the author refers to the teachings of Alan Kardec, which would be repudiated by the majority of English spiritualists.—TRs.

CHAPTER XIX

HUMAN RADIATION AND MEDIUMISTIC TELEKINESIS

Is the human being capable of exercising, beyond the visible limits of his organism, a radiating influence, more or less comparable with that of heat, light and electricity ? That is the question which is still asked in our time, and to which science has not given any definite reply, although the majority of savants may be rather led to deny the reality of this influence, or, at least, to doubt it.

We know how the savants of Mesmer's day received the theory of animal magnetism. The discovery of hypnotism by Braid and Charcot, that of suggestion by Faria and Liébault appeared to many men to ruin for ever the hypothesis of human radiation. This hypothesis persists, however, and comes to life again under various forms in the facts of mental suggestion and telepathy studied by a large number of observers in France, England and America, and more recently again with the N-rays of Blondlot and Charpentier, which are strongly contested, it is true, by physicists and psychologists with almost perfect unanimity.

The great difficulty in establishing the existence of this radiation, is, as already stated, the intervention of suggestion in the experiments which have to do with it.

We have elsewhere expounded¹ the method to be followed in order to eliminate suggestion in all these

¹ See Chapter VIII.

experiments and we shall not return to it here. Let us say that it consists in completely isolating the subject first of all, in taking away from him all possibility of seeing what is happening around him; then by observing and causing to be observed, before, during and after the experiments, an absolute silence; finally, by only acting at a distance, without contact, by the supposed radiation from certain organs of the operator, principally, by means of the hand.

By operating in these conditions one is led to draw the following conclusions from the facts observed. These conclusions are only given here as hypotheses intended to suggest new experiments and to be more or less completed and rectified by them.

First of all, we observe that certain individuals emit principally by the hand, an influence which seems to radiate at a distance and which falling on the nervous system of a subject determines, most frequently unknown to him, various effects, of which the principal are: anesthesia, contracture, involuntary movements, and, when the action is carried to the brain, a condition of torpor or even of sleep.

We are, first of all, tempted to suppose that this faculty of radiating or influencing at a distance is common to all human beings; but experiments prove that with a rather large number of them, it is so feeble and insignificant that it may be regarded as non-existent. From this point of view, therefore, human beings may be divided into two categories:—

1. Active or Radiating.
2. Non-radiating or Inactive.

Let us consider, for a moment, an individual of the first category. Are we to suppose that his radiation is produced only when he is in the presence of a subject? That would be like supposing that a magnet only sends forth its

radiations when it is amongst iron filings. As a matter of fact, when this individual operates for the first time on a certain number of other individuals, he is ignorant who amongst them will be influenced by him and who will be insensible to his influence ; it is the experiment alone which will inform him. We must, therefore, suppose that the emission of this influence is continual, and that it is made equally with subjects capable of feeling it as well as with those found insensitive to it, and also in respect to material objects as well as with human beings.

Therefore, if I belong by hypothesis to the first category (that of Active or Radiating) when I approach my hand to the body of another person or any object whatever, still more if I place it in contact with them, I constantly send them a radiation or current, in a word, an influence, exactly as the magnet constantly sends its effluvia to all the objects which surround it, although only certain objects are susceptible of receiving it, or at least of revealing it.

But then this question arises : how is it, if this radiation exists, that it only produces appreciable results in certain circumstances and those rather rare, so that in the majority of cases everything happens practically as though it had no existence, and, consequently, there does not seem to be any difference between the so-called active or radiating and the so-called non-radiating or inactive ? In order to reply to this question we must now consider no longer those that exercise this influence but those that receive it.

What happens when an individual, hypothetically radiating, sends this radiation on to a second individual, who is in no way affected ? We can make two suppositions ; either that the second individual is as though closed to the radiation from the first ; he stops it or repels it ; or else, on the contrary, he is so completely open to it, that he allows it to penetrate with such facility

that the radiation passes through him instantly without having the time to produce in him any sensible modification. Which of these two hypotheses is verified by the facts ?

Here is the answer given by experiment. Let us designate the presumed radiating subject by A, and the presumed inactive subject by B, who is at the same time incapable of being influenced by the radiation from A, and we call a third individual C, who submits directly to the action of A, and will manifest anesthesiæ, contractures, etc., in conditions explained above. If we cause A to act on B, nothing apparently is produced ; the same if we make B act on C ; but, if when making A act on B, we make, while the action continues, B act on C, we notice that C is affected just as though A acted directly on him. Everything happens, therefore, as though the influence of the radiating individual passed through the apparently insensible individual who is, however, really permeable and conductive.

Consequently, from the point of view of reception, human beings are divided into two categories, on the one hand, the *conductors* or *permeable*, who allow the influence to pass, and that it would seem, is the ordinary case in the human species ; on the other hand, the *non-conductors* or *insulators*, who arrest the influence and who thus probably give it the necessary time and intensity for the production of the effects observed.

Since human radiation directed on material objects does not generally produce any apparent effect, we ought doubtless to assimilate these objects to permeable individuals or conductors. It is, therefore, permissible to suppose that the influence radiating in a continuous manner from certain individuals is constantly dissipated and lost across all material objects surrounding it, connected with it by an absolute conductivity.

We shall, perhaps, be astonished that a force can thus

exist and act in a permanent manner, without generally making its existence and action known by any appreciable result. But the most recent discoveries of science have already begun to familiarise savants with the notion of such a force. Without speaking of electricity, which was so long ignored, but which, nevertheless, plays so considerable a part in nature, we will refer to the waves known as Hertzian, which accompany all electrical discharge and which traverse all bodies with an inconceivable rapidity. Professor Branly has shown that a tube containing iron filings is electricised by their passage; it is the same principle, we know, that is at the base of wireless telegraphy. But, failing a special reactive which manifests them, these waves make their way across all bodies without anyone being able to suspect their existence. Similarly, the alternative high frequency currents, studied by Professor d'Arsonval, cross different bodies, and especially the human body, in such conditions that it is impossible to perceive their passage; and yet it is sufficient to modify these conditions, and the individual whom they traverse may immediately be stunned. We can, moreover, reveal them by placing in the hands of an individual an electric bulb, which will become luminous under their influence. It is, therefore, by no means opposed to scientific analogies to suppose that the human body itself emits radiations of this character.

What happens, then, when the radiation meets an organism which arrests it instead of conducting it, as in the case of those whom we call subjects? We may suppose that this radiation is not only arrested, but transformed almost as a luminous ray which undergoes refraction or defraction on passing from one place to another. But it remains to be discovered in what this transformation consists.

Since the original and normal state of the force emitted by the human radiation consists in an absolute fluid, it

seems that this transformation can only itself consist in a modification of this fluidity : in other words, from being absolutely fluid, as it was in its seat of emission, it becomes, by the effect of the reaction of the subject who received it, more or less *viscous*, that is to say, its fluidity is diminished.

A portion of the effects observed in magnetic experiments seems to justify this interpretation. For example, in the experiments of Dr. Moutin, the contact of the operator's hands with the subject's back, determines a kind of adherence, such that the subject often receives the impression of being drawn from behind by invisible threads.

In the same way the operator's hand, presented at some distance from the subject's elbow, knee, hand or foot, determined in these various parts some attractive movements agreeing with his own movements, and that beyond all question of simulation or possible suggestion.

According to these considerations the subject will no longer be limited to arresting the radiation from the operator ; he will change the mode of it ; he will make the force pass from the fluid to the viscous state, and, thus transformed, this force will manifest some altogether new properties.

If we now refer to the facts witnessed by a rather large number of observers in spiritistic séances consisting of displacement of objects without contact, we are led to ask if there is not an identity of nature between these facts and those of which we speak.

When a medium after having placed his hands on a piece of furniture, a table, a small loo-table, etc., raises this piece of furniture and suspends it above the floor by its simple adhesion to the fleshy part of his fingers, when he attracts it and moves it to a distance by approaching and removing his hands, etc., he acts with regard to this object as a magnetiser does with regard to a magnetic

subject. We must, therefore, suppose that the furniture thus acted upon has previously been impregnated by the medium with viscous force. It seems to us, in fact, impossible to suppose here that the material object should be like the human subject. It is quite obvious this transformation is the work, not of the object, but of the medium.

Hence, it follows that any individual known as mediumistic, if he is able to produce effects of the same character as those we describe, does not enter, strictly speaking, into either of the categories of operators or subjects, but he is equivalent to the reunion, to the fusion into one and the same organism, of two different individuals, of which one will be the operator, that is to say, will continually furnish the fluidic force, and the other will be the subject, that is to say, will continually change this force into the viscous state.

One fact which seems to confirm this hypothesis is that in nearly all spiritistic séances in order to start, the medium asks for the presence and co-operation of a certain number of persons, among whom some, unable themselves to produce any effect, exercise however a very favourable influence in the development of mediumistic faculties. But in any chain of persons some probably emit the force in a fluidic state; others are content to let it pass, thus they simply play the part of conductors; others, however, arrest it on its way, accumulate it and transform it; consequently if one of the latter is a medium, his production of the viscous force is found in some way multiplied by all the fluidic force which he constantly receives from the circle in which he is placed.

Perhaps our hypothesis will enable those phenomena to be produced experimentally which hitherto have been observed almost accidentally during spiritistic séances.

In fact, if the medium is by hypothesis the natural

unity of an operator and a subject, we ought to be able to create a medium by the artificial union of a subject and an operator.

Let us suppose that a subject already tested in previous séances and recognised as eminently fitted to undergo the magnetic influence, places his extended hand on an object sufficiently mobile, such as the top of a small and very light table : let us, on the other hand, suppose that an operator, already tested in previous séances, and eminently fitted to exercise the magnetic influence, places his hand over the subject's and maintains the contact for a sufficient time ; what ought to happen according to this hypothesis ? The continual radiation emitted from the operator's hand is constantly arrested by the subject's hand, it accumulates and is transformed and becomes viscous, but, doubtless, at a certain time, when the subject's hand may be said to be saturated, a part of this force thus transformed is deposited in the object which is in contact with the hand, and the surface of the table is, by degrees, impregnated with the viscous force. Therefore, at this moment, if the operator slowly raises his hand, not only will the subject's hand be attracted, but also the object in contact with the hand. That, we believe, is the most simple experiment we can institute to verify the extension of our magnetic hypothesis of spiritistic phenomena. We propose to try it when we have the opportunity.

A few years ago chance enabled us to be present at an experiment very similar to that which we have just supposed, but which at that time we were unable to understand.

In December 1894, I was spending a few days in the small town of Amélie-les-Bains. I learned that about two or three months previously a small group of spiritists had been formed which had obtained some very characteristic

phenomena. This group was mainly composed of a teacher, his wife, two daughters, an elderly aunt, and also the wife and family of a neighbouring teacher. The phenomena hitherto obtained were exclusively of a psychological character, and consisted in communications or messages from the so-called dead. I did not conceal my scepticism on this matter and declared that, in my opinion, *physical phenomena* alone were of real interest.

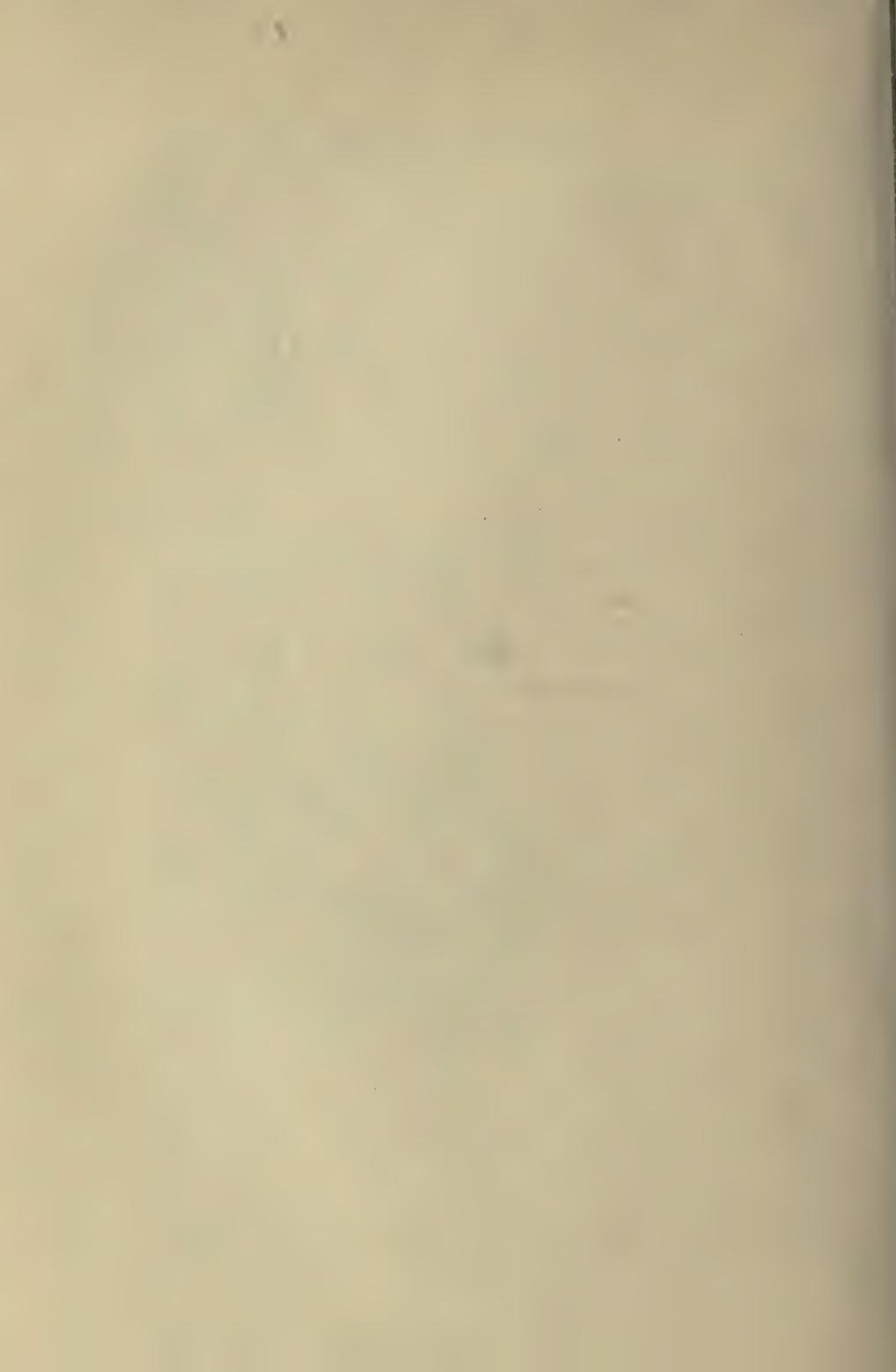
“What do you call physical phenomena ?” I was asked. Without giving any explanation I proposed to try and produce them and every one promised to assist at the experiment. The sitters’ hands were placed on the octagonal top of a small three-legged loo-table and I held mine a short distance above all the hands placed in juxtaposition. After a few minutes’ waiting, suddenly raising my two hands, I gave a signal to the mediums to imitate my gesture. Marvellous ! The table left the floor with all its three feet, as though adhering to the mediums’ hands, but that only lasted for a flash ; on our cry of surprise it instantly fell back. No one wished to cheat, but when we tried to repeat the phenomenon, our efforts were in vain ; the table rose up on one of its legs, but it did not leave the floor altogether.

“Let us try another method,” I said. The hands were again placed on the table, and it was arranged that at a signal given by me, they should be slowly raised a few inches and remain extended in such a way as to form an arch. When I thought the time had come I gave the signal and presented my hands a short distance from one of the sides of the octagon. I made the gesture of attracting the table towards me and, to my great surprise, the table glided along the floor in my direction, and each time my hands renewed their beckoning the gliding recommenced. The mediums stood, their hands making an arch over the table, following it step by step. The phenomenon was repeated several times, and at several séances which followed. I had the loo-table brought to my house and wishing to experiment in somewhat more precise conditions I had recourse to the following arrangement. I drew on the floor a chalk circle around each of the feet of the table and the table itself was isolated in

the centre of a large circle drawn in the same way. The mediums were forbidden to put their feet within these boundaries. One of the spectators was placed outside the group and was asked to stoop down to see if, at any time, the mediums' hands were in contact with the surface of the table and to cry "halt" if he saw anything suspicious. In these conditions, in full light, at two o'clock in the afternoon, the table on several occasions left its place and traversed about two yards of the floor. The circles drawn on the floor enabled us very easily to measure the distance it travelled.

It seems that this experiment fulfilled the conditions given above; but it would be very interesting to try it again under test conditions, apart from all intrusion of the spiritistic hypothesis, solely by the combination of an operator and a magnetic subject.

Let us again say, in conclusion, that it is necessary to see in the hypothesis here proposed, not a theoretical hypothesis, intended to explain all the facts systematically but an experimental hypothesis, simply of use for inventing experiments. For that reason it is not necessary that it should be defined in all its minor details, because it is the experiments suggested by it which, at the same time, gradually verify and determine it. In order to take away from animal magnetism the unjust discredit with which savants have hitherto regarded it, it is necessary to apply to it the experimental method, so clearly expounded by Claude Bernard: it is by facts, not by arguments, that we shall end by forcing it upon the serious attention of science.



PART V
AN ATTEMPT AT GENERALISATION

CHAPTER XX

THE CONDUCTIBILITY OF PSYCHIC FORCE

I

ALTHOUGH official science still refuses to admit the existence of a special force inherent in the human organism, more or less analogous to electrical or magnetic forces, and, like them, able to radiate at a distance, we believe that before long this hypothesis will end by forcing itself on all those who have studied, without prejudice, the whole of the phenomena known as hypnotic and psychical, as the only one which can explain to us, not, perhaps, the total, but at least a third of the phenomena, and, perhaps, even more.

Doubtless, the hypothesis of suggestion, as it is understood and expounded by the School of Nancy, has shown itself, in the hands of its adherents, marvellously capable of accounting for many facts which we believed, at first, to be instances of telepathy or animal magnetism; but, however far it is stretched, it does not seem to us to be capable of explaining all the facts of this character, and those who maintain it exclusively, find themselves led presently to distort or deny through prejudice facts which they cannot include within its compass.

We have tried to show elsewhere¹ that suggestion does not necessarily exclude the existence of another force, that which Mesmer thought he discovered and which differing from suggestion (which is purely internal, or, so to speak, intra-organic) consists in the influence still undefined and unstudied that one organism exercises on

¹ See Chapter IX.

another, an external or inter-organic force, which offers very great analogies with electricity and magnetism, at least, so far as we can judge up to now by its effects.

It is of this force that we intend to speak now under the name of *psychic force*, and, taking for granted that it exists, we wish to draw the attention of investigators to one of its most remarkable properties, *i. e.* its *conductibility* and to show the advantage of this property, from the point of view of method, for the experimental study of all this class of phenomena.

Perhaps subsequent researches may lead us to differentiate and to distinguish several different forces, where we only suppose one. Thus the mesmeric, or, strictly speaking, magnetic agent, is perhaps, distinct from the telepathic agent, and, perhaps, both are distinct from the strictly psychical agent, by which mediums produce those almost incredible phenomena of displacement of objects, materialisations, etc., which a certain number of investigators, such as Sir William Crookes, Lombroso, Richet, and others have described, and the reality of which is still doubted by the large majority of savants.

But, however different these agents may be, they doubtless obey the great law of the conservation of force, and, consequently, it is always permissible to regard them as so many modalities of universal energy, necessarily related one to the other, and more or less directly mutually convertible, and even capable of being transformed into more frequent and general modalities known as heat, light and electricity. In any case, in spite of the more or less profound differences which separate them, they all present to us the common property of *conductibility*, which we wish to make the subject of the present study.

II

M. Pierre Janet, whose great competence in such questions as these is well known, giving an account in the *Revue philosophique*¹ of Dr. Baréty's work, *Animal Magnetism, studied under the name of neuric force*, recognised that the question of animal magnetism, although generally decided in the negative, had never been scientifically solved, and thus was still set before investigators for examination : he admitted that certain phenomena of attraction, anesthesia, etc., produced on subjects, apart from all apparent suggestion, by contact alone or the mere presence of the operators, had often struck him, that he had remarked as particularly suggestive the phenomenon of the so-called magnetic chain, but he immediately added that if it should be necessary to resume the study of all these facts it would be on the condition of not following the errors of the old

¹ *Revue philosophique*, 1888, p. 91. "There is no doubt that on many of these points, this return to the past is quite legitimate and that the author was right in calling attention to these misunderstood or ridiculed observations. All investigators have had frequent opportunity of witnessing analogous phenomena, and, with regard to myself, I have, for a long time, been struck with certain sensory anesthesiae which have arisen at the approach of my fingers and at the curious effects of the magnetic chain. But is it necessary when we again commence a work already several times condemned, not to do it exactly as it was done before, and to avoid the perils to which earlier students have succumbed ? Can we say that M. Baréty has accomplished this indispensable condition ? Unfortunately, it does not seem that he has done so."² Further on in the same article, we read : "The study of animal magnetism was not complete so long as the facts which gave birth to the theory of the magnetic fluid were not co-ordinated and discussed. The theories of M. Baréty and those who are engaged, as he is, with the phenomena of polarity, ought to include much truth, and a book such as this will always have the result of awakening attention to these important phenomena which have been too readily neglected."³ The conjectures of M. Pierre Janet do not seem to be realised, and if the attention of the public and savants was awakened by M. Baréty's work, it is necessary to admit that it has very quickly gone to sleep again.

investigators but of applying to them a new and more rigorous and precise method.

We endeavoured to give the principal rules of this method in a previous chapter, and now take the liberty of reproducing and explaining them here.

1. To experiment always and exclusively with persons in a waking state.

2. To make it absolutely impossible for the subjects at the beginning and throughout the experiments to see what takes place in their presence, by hermetically bandaging their eyes.

3. To observe, before and during the séance, the most rigorous silence, imposing the same rule on all those present.

4. To abstain scrupulously from all contact with the subject. The sense of touch must not be supplemented by the subject's senses of sight and hearing so that he may suspect what is going on around him.

5. Finally, to combine the experiments in such a way that the operator himself, at least the first time they are made, cannot foresee what will be the result and should only be enlightened by the issue.

All these precautions are for the purpose of completely isolating the subject at one and the same time from the physical and mental points of view. It is necessary that he should be absolutely ignorant of the nature of the experiments which it is desired to make on him in such a way that he reacts as much as possible as a physical instrument would do.

There are, in all this class of research, four principal causes of illusions and errors against which investigators and experimenters cannot too carefully guard, and which are all the more formidable in that they unite and reinforce one another in nearly every case.

The first, the importance of which has perhaps been exaggerated, is the *simulation* of subjects, fraudulent or

complaisant, voluntary or involuntary. In order to simulate, and thus invalidate the experiments, the subjects must know or guess the phenomena expected of them, whether they have already seen them in other subjects or whether the operators announce them before trying to produce them. That is why the experiments of suggestion, properly so called, generally lend themselves to simulation (as the School of La Salpêtrière very rightly object to the School of Nancy) : that is why also experiments in magnetism, in order to be conclusive in proof, ought to be combined in such a way that the subjects may not know beforehand what kind of phenomena it is desired to produce or observe : hence the necessity of maintaining absolute silence in their presence and making them, by blindfolding, incapable of knowing what is happening around them.

The second cause of error, the importance of which we cannot exaggerate, is that of suggestion, to which subjects are exceedingly sensitive, and which experimenters very frequently exercise, unknown to themselves, not only by words, but also by gestures, looks, their general and personal manner of conducting the experiments, etc.

On this point the School of Nancy has justly reproached the School of La Salpêtrière of being too little suspicious of suggestion. But as the proverb says, "A warned man is worth two." In order to cut short all possibility of verbal suggestion it will be sufficient for the experimenters to impose upon themselves and the spectators the law of absolute silence before, during and after the experiments. On the other hand if we have really made the subjects incapable of seeing anything, and if we rigorously abstain from affording them clues even by the slightest contact, the ordinary channels of indirect suggestion will be found closed, and it will then only remain to vary each time the order and nature of the

experiments (at least in detail) to be assured that if suggestion may yet interfere, it is only under the form of auto-suggestion. But it is impossible that the auto-suggestions of subjects should agree constantly and precisely with the actions exercised on them by experimenters unknown to them. Moreover, the subjects, being awake and in their normal condition are far less open to suggestion than when we experiment on them by previously placing them in an hypnotic trance.

The third cause of illusion and error is the extreme sensitiveness of subjects, their hyperesthesia which has caused them to perceive impressions entirely imperceptible to ordinary sensitiveness. Thus, for example, when presenting your hand a few inches from the subject's skin you observe, after thirty or forty seconds, an anesthesia, contracture or some other modification, more or less abnormal, in the part which you have covered, you would be wrong in concluding that your hand sent a radiation of a kind yet unknown, the presumptive cause of the effects which you observe : it is all explained by the hyperesthesia of the subject who has felt the heat from your hand and has suggested to himself, perhaps unconsciously, the anesthesia and contracture. If it is not possible to avoid entirely the objection *a priori*, we can at least weaken it, by noticing that the hyperesthesia of subjects generally only exists in hypnotic conditions, and that there is no room consequently to postulate it with subjects on whom we experiment, when these are awake or in their normal condition : it is moreover easy to make certain by experiment that it does not exist with them if when abstraction is made of the special phenomena determined by the personal action of the experimenters, their sensitivity behaves in all respects like that of an ordinary person ; that in particular whilst certain experimenters constantly provoke in them these pheno-

mena, certain others, operating in precisely the same conditions, never succeed in provoking them unless they are placed in contact with the previous experimenters, by which we already perceive how this singular conductivity of psychic force can serve to prove its existence and show what are its actual effects.

Finally, the last cause of error, and not the least formidable, is the extreme perspicacity of subjects, what we may call their *intellectual hyperesthesia* which enables them to divine by almost imperceptible indications, or even, if the possibility of telepathy or mental suggestion is admitted, without the intermediary of any sign, the hidden intentions of the operators in some immediate way.

It is important to distinguish these two kinds of perspicacity: the one, universally admitted, may be called *hypnotic perspicacity*; the other, still disputed by the great majority of savants although the members of the Society for Psychical Research may be disposed to see it almost everywhere, *telepathic perspicacity*.

As regards the first, the method, of which we have just given the rules, only leaves a very narrow field of action, since the subjects are and remain, as we ought to satisfy ourselves from time to time during the course of the experiments, awake and in their normal condition, and since, moreover, all the indications to which their perspicacity may lend a meaning, can no longer reach them by the ordinary channels of sight, hearing and touch. This perspicacity even, it is possible and necessary to test from time to time by supplying false indications, by trying to lead it astray, as we have ourselves done several times in the course of our personal experiences: those who do so will doubtless be convinced, like ourselves, that it is infinitely less active and subtle than they have generally supposed, at least if the conditions demanded by our method are rigorously fulfilled.

This is not the place to discuss in detail the delicate problem of telepathy and mental suggestion. If we admit that it may be a frequent and even usual phenomenon, it is certain that the difficulties of this class of research are considerably increased. But we have been struck by the fact that every time we have tried to prove mental suggestion experimentally the failures have been incomparably more frequent than the successes, whilst it would be, on the contrary, necessary to suppose that this phenomenon is produced with the greatest ease, and, so to speak, at every moment in experiments where we did not seek in any way to provoke it.

As to ourselves, we have never succeeded in suggesting a definite idea to any of our subjects, although we have tried many times, and although we have been able to put to sleep and awaken one of them by a simple effort of will, nor have we ever observed that any of them spontaneously guessed our thoughts or unexpressed intentions. However, the cases where we have produced anesthesiae, contractures, attractions, etc., by the simple presentation of the hand, in the most varied circumstances and with subjects whom we have seen for the first time, are relatively innumerable : by what miracle did we in all these cases realise, without wishing it and without knowing it even, this phenomenon of mental suggestion which we have never produced or observed in any way ? The telepathic perspicacity of subjects therefore appears to us in the meantime something rare and exceptional, and it seems to us that where it exists, an experimenter with some experience will not have much trouble first of all in suspecting it and subsequently recognising it, for he will have learned to distrust those subjects with whom all experiments invariably succeed, in whatever way they are operated upon. But as it will doubtless happen to him, as it has to us, often to see facts not responding to his expectation, even in experiments begun again with the

same subjects and in circumstances apparently identical, perhaps it will not be too difficult for him to observe the fifth rule of our method : To try to conduct the experiments in such a way that the operator himself cannot foresee what will be the result, and that he may only be informed by the issue.

III

There being now no doubt as to the method by which it is desirable, according to our view, to conduct all researches relating to psychic force, it is time to enter upon the study of one of the most general and important properties of this force, to wit, its *conductibility*.

In the course of this study we shall be led to quote a number of experiments hitherto unpublished, which we have ourselves made, according to the method of which the prescriptions have just been read : but we shall at the same time quote other experiments made by other investigators, in conditions, perhaps less rigorous, but which are none the less interesting because of the similarity of the results.

If we glance at the different effects of psychic force, from the most simple and ordinary up to the most complex and exceptional, we can arrange them in a kind of series of which the following are the principal degrees :—

1. Phenomena of anesthesia, contracture, attraction, etc., produced locally in more or less extensive regions of the organism and often accompanied by various sensations of cold, heat, pricking, etc.

2. Development of the suggestibility of the subject, every time that the action of the psychic force has been directed to the brain or when it is propagated there.

3. Production of the various hypnotic, lethargic,

cataleptic and somnambulistic conditions with the different characteristics proper to each of these conditions and, in particular, with that which the ancient magnetisers called "the *rapport*" and which we particularly observe in somnambulism.

4. Externalisation of the sensibility (phenomenon specially described by Colonel de Rochas and Dr. Paul Joire of Lille).

5. Phenomenon of thought communication (thought-transference, telepathy, mental suggestion).

6. Action exercised on material objects, movements, noises, levitations, materialisations, etc., (phenomena called spiritistic or mediumistic usually produced by mediums more or less deeply imbued with spiritistic beliefs).

This enumeration would be almost complete if it contained the therapeutic effects of the psychic force (curative magnetism, psychical medicine) and the phenomena of lucidity or second sight, but we have voluntarily omitted them, first of all because, by reason of their very great complexity, they do not lend themselves well to experimental analysis and can only be studied by the always obscure and uncertain means of observation, and also because they are those of which we have less personal information and their connections with the conductivity of the psychic force are still undetermined for us.

These two kinds of effects being reserved, we think we can affirm that all the others are susceptible of being *conducted*, that is to say, produced at a distance across certain intermediaries, and that thus the power of producing them can be transmitted by those who naturally possess it to those who are naturally without it.

Let us observe first of all that the intermediaries, by which the psychic force can be thus conducted, are of two kinds: the one simple material objects, for example a

metallic iron or copper wire, identical with those which conduct the electricity in the telegraph or telephone; the others living beings, human beings; and it is particularly this second kind of conduction (living or organic conduction) that we shall here study, after having said a few words on the first (inorganic or material conduction).

IV

We have elsewhere related¹ how we were led to undertake a series of methodical experiments on the action of the hand directed at a distance towards various parts of the subject's body. The one on whom I then experimented, Gustave P., presented this remarkable peculiarity which I had never found in others and which he himself appeared to have lost a few months later, viz. that my right and left hands produced different and even opposite effects on him. Presented opposite his forehead at a distance and for a longer or shorter time, my right hand caused him to go into a deeper and deeper hypnotic condition; my left hand gradually restored him to the waking state, apart, it is understood from all direct or indirect suggestion, the subject's eyes being hermetically bandaged. Presented in the same conditions opposite some part of the body, my right hand produced more or less energetic attractive movements, my left hand, tinglings and tremblings: the two hands presented simultaneously, the palm of the one leaning on that of the other, and the fingers directed perpendicularly towards a part of the subject's body, did not neutralise their several effects (as I expected when I made the experiment for the first time), but on the contrary, combined them and produced in the subject what he called "*le gachis*"

¹ See Chapter VII.

(the muddle), that is to say, attraction and pricking at one and the same time.

It was during a séance when I had as assistant and spectator M. Louis B., professor of physics at the Monge school, afterwards at the Carnot College, that I experimented for the first time on the material conductibility of psychic force.¹

My colleague and I took a copper wire, insulated by gutta-percha, like those used in electric bells in rooms. I held one end of the naked wire in my right hand and went as far as possible from the subject, my colleague presented the other end to him, after rolling it round a wooden reel which he held in his hand, and we saw that the point produced the same effect that my right hand produced at the same distance, that is to say, it attracted the part of the subject which it pointed to. I replaced my right hand by the left; the copper wire faithfully transmitted the pricking influence, just as it had done the attractive. I grafted on to the single wire placed before the subject a second wire in such a way that I could use the two hands simultaneously, and the one wire conducted without confusion the united action which the subject called "*le gachis*."

The following year, I repeated the same experiments with a young student of law and philosophy, Laurent V., who was willing to submit himself to them for some months purely out of devotion to science with really admirable conscientiousness and patience.²

He came to my house twice a week, accompanied by two of his companions, the one B., a pupil at the Normal Upper School, student of philosophy. The other C., then a candidate for the same school, now a pupil in the science division. B. acted as my secretary and C. as assistant operator. Contrary to what I had observed in my

¹ See Chapter VII.

² These are the experiments which I summarised in an article in *Les Annales des Sciences Psychiques* under the title of "A new method of verifying nervous action at a distance," which was noticed by M. Binet in the *Année psychologique* when he regretted that I had not enlisted the services of a professional conjuror. See Chapter VIII.

previous experiments with Gustave P., I did not notice any difference in the action of my right and left hands, each producing the same effects of anesthesia and contracture. There was only attraction of the parts visualised, for instance, the hand or foot, arm or leg, when the operator's hand, after having remained for some time motionless in front of these parts, itself executed the movement, which was then reproduced almost synchronically. However, if I held the end of a copper or iron wire in my hand and placed the other end in front of C. through the medium of a glass rod around which it was rolled, the influence from the hand was conducted by the wire, and produced, not without delay, the same results. I could even obtain in this way extremely limited anesthesiae, clearly local for a few millimetres in extent, exactly underneath the end of the metallic wire. In rolling copper wires around the five fingers of my hand, and directing the five tips towards the subject, it seemed that the action was considerably intensified, until the subject made a sudden recoiling movement and said he felt a sensation of five burning claws pressed into his skin. (Is it necessary to repeat that the subject had his eyes carefully bandaged, that the strictest silence was observed by B. and C., and that communications only passed between us by means of writing on slates, and that all the small apparatus used, electrical wires, copper solenoids, etc., were carefully hidden before the subject arrived, and were not brought to light until after he was made incapable of seeing anything?) A copper wire rolled like a solenoid around my arm from wrist to elbow, to which I attached another copper wire the point of which I presented to the subject, had the same effect as it would have had if I had held it in my hand or rolled it round my finger.

Everything occurred in these experiments, as if the psychic force of the operator, emanating probably from all parts of his body, although doubtless chiefly from his fingers, could be collected and conducted to a distance by a material intermediary, such as a copper or iron wire.

Some similar experiments, much more numerous and complicated, have been published by Dr. Baréty, in his

work *Le magnétisme animal*. Thus he held in his hand three knitting needles placed in the form of an equilateral triangle across a bi-convex lens, and the doctor declares that three sensations of pricking were produced in his subject which became one only when the subject's hand, the lens and the needles were at suitable distances. Dr. Baréty even claims to have measured the speed of the conduction of magnetic rays : transmitted along a hempen string, they travelled, according to him, about a yard in a second. The publication of such interesting results has not, however, succeeded in overcoming the scornful or hostile indifference of the learned world, perhaps because in his work on *Animal Magnetism* it does not appear that the experimenter had grasped the great importance of method in this class of research, or that he systematically tried to exclude from his experiments all possibility of simulation and suggestion.

In a more recent work—*L'hypnotisme scientifique*—Dr. Crocq, junior, of Brussels, relates some experiments (pp. 302–303) where he seems to have discovered the phenomenon of psychic conduction, but deeply imbued with the ideas suggested by the School of Nancy, he does not wish to see it and has not seen it. It concerns a subject sent to sleep in whom the approach of the magnet determined the phenomenon of transference.

“ I raised the right arm of the subject : this arm remained motionless in the position in which I had placed it : I brought a magnet *without saying anything*¹ towards his left arm ; at the end of a few seconds the right arm was lowered imperceptibly, the left was raised and took the position of the other. I repeated this experiment, which

¹ The words are underlined in the text. It seems that there was here a contradiction, because this passage related to a demonstration made by Dr. Crocq before other physicians ; therefore, at the time when he claimed to experiment without saying anything, he really spoke of some experiment he had made, and thus told the subject beforehand, as well as the spectators, what would happen.

was again successful : I made it with the lower limbs : the result was the same ; I placed the magnet behind the subject's head, his arms were raised, first the right, then the left. We might suppose that the subject was guided by my presence on one side or other of his body and that he knew from which side the magnet would come, although his eyes were bandaged. That is not so. You see, gentlemen, I gave M., R. and K. a sign to place the magnet while I spoke purposely from the other side : the transfer occurred. M. G. thought there was mental suggestion. I placed myself at a distance from the subject, turning my back ; I did not know what was going to be done, yet the transfer took place. All this would seem to indicate the reality of magnetic action on the sleeping subject : but if I brought my fists forward instead of the magnet, the same phenomena were again produced.

"The objection can be raised that if Charcot, Luys, etc., attribute certain actions in connection with somnambulism to the magnetic fluid, Luys, de Rochas, etc., believe that man is charged with a similar fluid and, consequently, when I made use of my closed hand, the fluid which is liberated can act in a similar way on somnambulism. Unfortunately, if I use my walking stick instead of the magnet or my hand, the transfer is still made : I can use any article, the phenomenon always occurs. It would therefore have to be admitted that all (?) bodies are good conductors of the human fluid, and that this human fluid is similar to the magnetic fluid.

"*I do not feel able to accept any such theory and I prefer to conclude from these experiments a very simple thing ; that is, that my subject felt, whenever anything was brought close to his body, which was in a condition of hyperesthesia, that in short, he possessed a very great sensibility, a kind of pseudo-externalisation of sensibility ?*"¹

¹ The italics and point of interrogation are ours. The author, however, admits that his subject is anesthetic, since he can prick and burn him, etc., without producing any reaction, but he claims that this general anesthesia does not prevent his particular hyperesthesia at the same time. We reproduce this passage because it is a typical example of the way in which the exclusive partisans of suggestion experiment and argue.

V

But the method of conduction of psychic force which appears to us most interesting from the point of view of the applications which may be drawn for new processes of experimental research, is that which operates through the intermediary of the human body.

Do all men possess the faculty of radiating psychic force ? *A priori*, we should probably say "Yes" : but if we consult experiment, it will tell us that with certain individuals, this radiation is so feeble that it does not manifest itself in every case by any sensible result. We have many times witnessed this fact with Laurent V. as we have elsewhere related.¹

In these conditions (those prescribed by our method : subject awake, eyes hermetically closed, spectators absolutely silent), ten, or any number whatever of operators, of different ages and sex, went successively and placed their hands, as I did myself, face to face with any part of the subject's body that they pleased. We noticed that out of these ten operators, a certain fraction produced the same effects of anesthesia, contracture, attractive movements, etc., that I produced myself, with greater or less rapidity, more or less intensity, etc., whilst the remainder did not produce any appreciable result even after ten, fifteen, twenty minutes of endeavour. Therefore, amongst the spectators, some gave out the magnetic influence, others did not, and not one of us could know it *a priori*. The results were, moreover, maintained from one séance to another, that is to say that the operator who showed himself efficient at one séance would generally be the same at those which followed, and in the same way the one who had produced no effect at first would not afterwards do so.

¹ See Chapter IX,

It was so with the two companions of Laurent, who accompanied him to my house ; the one B., showed himself active at the first séance and remained so until the end ; the other C. never produced any result, at least every time he was not placed in contact with either B. or myself. In point of fact the magnetic influence can be transmitted in a moment from one that possesses it to one that does not possess it. Imagine for example, an individual A., who, after twenty minutes' presentation of the hand has not produced any result on a magnetic subject who has, on the contrary, been influenced in less than a minute by another individual B. Well, it is sufficient for A. to put one of his hands into B.'s and present the other hand to the subject, this hand remaining free for about a minute, when the results of anesthesia, contracture, etc., will be produced in the part towards which it is presented. When he ceases to hold B.'s hand, he will again become ineffective.¹

We have often observed, although in less rigorous conditions, the same phenomenon of conduction in certain experiments where we employed Dr. Moutin's process, which he has described in his thesis under the name of *Diagnostic de la Suggestibilité*. This process consists, we may say, in applying the hands, widely opened, to the shoulder-blades of a person, with the thumbs joined in a knot on the vertebral column. It happens very frequently when an experiment is made with a person sensitive to the psychic force that he is forcibly attracted until he

¹ We add : " Sometimes—and I have myself made the experiment with a French professor, universally known, and whom I had the honour to have for master, M. A. F.—if the individual who cannot act, remains a sufficient time in contact with one who naturally possesses the magnetic influence, he accumulates in some way, this influence in himself, and once he is sufficiently charged, he can successfully operate for a longer or shorter period." Thus, the psychic force would be not only conductible, but also cumulative; such is the conclusion which seems to result from this experiment made with Laurent as the subject, the idea of which springs entirely from M. A. F,

loses his equilibrium or is compelled to walk backwards. The attraction may even be felt one or two inches away without contact. But what is most significant is that it can be exercised on a subject through another subject who does not himself feel it. Thus it happened to me several times, whenever I tried to attract one of my friends, Dr. S., who was very sensitive to the Moutin process, through the body of another person, absolutely non-sensitive and incredulous, scarcely touching the subject on the shoulders, when he offered his back for the application of my hands.

We shall find the same conductibility of the attractive effects of the psychic force in the extraordinary and almost incredible experiment related in a previous chapter.¹

It refers to a young man from the Pyrenees, fifteen years of age, Jean M., whom I had for six months as a servant, whose hypnotic and magnetic sensibility was exceedingly strong. We ask to be excused for partially reproducing this account :—

“ One Sunday afternoon in January 1893, on returning home about three o’clock, I learned that Jean, having done his work and feeling tired, had gone to rest. Without going into his room, the door of which stood half open, I remained on the landing and looked at him sleeping. He was stretched out on his bed, fully dressed, his head in the corner opposite the door, his arms crossed on his chest, his legs placed one across the other, and his feet lying lightly off the bed. The thought came to me to make an experiment. Standing on the landing, about three yards away, I extended my right hand in the direction of and at the height of his feet. After a minute or two (probably less, a few seconds only) I slowly raised my hand, and, to my great surprise, I saw the sleeper’s feet rise and follow the ascending movement of my hand in the air. I repeated the experiment three times, and the phenomenon was reproduced three times with

¹ See Chapter VII.

regularity and the precision of a physical phenomenon. Amazed, I went in search of Madame B. and asked her to make as little noise as possible. The sleeper had not stirred. Again, on two or three occasions, his feet were attracted by my hand. Madame B. took my left hand, and, with her free hand, did as I had done : she succeeded with me ; but, when she ceased to touch me, she could not effect anything."

VI

We have just seen how the most simple and the most common physical and physiological effects of the psychic force, anesthesia, contracture, attractive movements, etc., can be transmitted by conduction. We shall see that the most complex and delicate effects, where the psychological element intervenes obey the same law.

The psychical force, directed to the brain of a subject, determines, first of all in a general manner, a kind of exaltation of suggestibility ; then, if its action is sufficiently intense and prolonged, those special conditions which Charcot was the first to distinguish clearly under the name of catalepsy, lethargy and somnambulism.

Now, "it was sufficient for me to present my open right hand for half a minute in front of Gustave P., in order to place him in the first condition characterised by extraordinary suggestibility (the state of fascination or credulity), but in which he preserved all the external appearance of the ordinary waking state. In this condition, if one of the spectators spoke to him, in order to suggest an hallucination, paralysis, etc., the subject who had perfectly heard and understood the sense of the words did not obey the suggestions, but if the suggestioner held me by the hand (the subject's eyes being bandaged) the suggestions immediately became as effective as if I

had made them directly myself."¹ Thus the power of suggestionising a subject can be transmitted by conduction from one individual to another.

I have not made any experiment on lethargy and catalepsy from the point of view of conductibility; but somnambulism has given me the opportunity of observing a certain number of very curious facts.

In order to put Gustave P. into a somnambulistic condition, it was sufficient for me to place my right hand in front of his forehead for a certain time, or to make a certain number of passes from the crown of the head to the stomach. Once asleep, he was no longer, except on rare occasions, *en rapport* with any one except myself. If another person spoke to him, he did not reply; I, alone, seemed to be in communication with him, and that without having made any such suggestion to him. However, any other person could place himself *en rapport* with him by taking hold of his hand, or, what was still more extraordinary and brings us to the phenomena of conduction, by taking my hand.

In certain séances, the phenomenon was produced with marvellous regularity and precision, the subject, it need not be repeated, having his eyes carefully bandaged, and the spectators taking every precaution that he should not be informed by any means of what was happening around him. For example, one of my arms was extended stationary on a table close to where the interlocutor was sitting; each time he placed one of his fingers on my hand, the subject heard and answered him; as soon as the contact ceased, although in the middle of a sentence, the subject showed spontaneously by his questions, silence or attitude, that he had ceased to hear. In order to make the experiment still more strict (whilst combining material conductibility with living conductibility), I placed two nails in the two

¹ See Chapter IX.

ends of the table and connected them by an insulated copper wire, the two naked ends hanging on either side. I was seated at one end of the table and held one of the ends in my hand; the spectators were seated at the other end and each of them touched with the finger the other end or suspended the contact at will. In these conditions we verified the instantaneous establishment or suppression of the *rapport* between the subject and any one of the spectators who touched or ceased to touch the end of the wire.

"In other séances, variations were produced which I could not succeed in explaining to myself. For example, it was sometimes necessary, in order that the *rapport* should be established between one of the spectators and the subject, that I myself made the contact, either immediately or meditately with both at once. That was undoubtedly the case in a séance at which M. Ed. Gasc-Desfossés was present, as he thus reported in his work on *Animal Magnetism*.

"M. B., having placed his subject, Gustave P., in a somnambulistic condition, conversed with him; the subject being only *en rapport* with him and having his eyes bandaged with a very thick double black bandage, which covered half of his face and prevented him from seeing anything that was going on around him. M. B., then, with one of his hands, touched some part of the subject's body in order to get into physical contact with him, and, in the other hand, held the naked end of a copper wire, covered the whole length with insulating silk; the other end of the wire, also naked, was held by me, and I put several questions to the subject, to which he accurately replied; when I released my hold of the end of the wire, he heard nothing more, and my questions were unanswered, whilst he continued to converse with M. B., who still continued to touch him; when I again took hold of the conducting wire, the *rapport* was re-established.

The experiment, which was several times repeated, invariably gave convincing results. There was therefore, a certain fluidic communication from M. B.'s body to mine by means of the metallic intermediary, absolutely as though it was a question of physical electricity."

At other times, when operating, as I have indicated above, the interlocutor making contact with me by means of the wire, but without me making a contact with the subject, a very singular phenomenon was observed. The subject perceived the voice of the interlocutor, but could not discern what was said : " I hear you speaking to me," he said, " but I do not know what you say. It is like a buzzing noise at a distance ! " ¹ If I then took hold of the subject's hand, he understood what was said to him, often even what had been said the previous moment and when he had not appeared to understand, as if the *rapport* established by me had a kind of retroactive effect.

Other times again, particularly when the spectators were much fewer and when I had direct contact with them, the *rapport* was finally established between them and the subject in a permanent manner without my intervention being any longer necessary. There was produced, apparently, something similar to what we have already noticed in the experiment made with M. A. F.

Moreover, others before us had noticed this conductivity of somnambulistic *rapport*. Without speaking of the ancient magnetisers, Dr. Baréty, in an article which was published in the *Revue de l'hypnotisme* in 1888, under

¹ As I experimented with Gustave P. in these same conditions, before an audience of more than fifty persons, he remained impassive in the midst of questions put to him from all parts; but when one of the number spoke to him putting a finger on the wire, we saw him start and show much surprise. " Can you hear ? " he said to me. " What is that noise ? I should say the wind in the telegraph wires," and he tried to imitate it : " Zou ! Zou ! "

the title of *La Force Neurique*,¹ reports some experiments he had made, for the greater part in the presence of his colleague, Dr. Planet, and which had evidently the same signification as ours. The subject L., thirty-two years of age, in a state of hemianesthesia, only heard, saw, and felt three persons in the hypnotic condition : but he could be put *en rapport* with other persons or with animals, or with any objects, either by contact (with the finger), or at a distance, by means of an intermediate object, or even by the gaze, by the finger-tips directed towards the persons or things which it was wished thus to put *en rapport* with him, or, better still, towards their images reflected in a mirror. "Every one," said Dr. Baréty, "placed by me *en rapport* with L. could influence him as I did myself directly, but only so long as this state of *rapport* was maintained by me. In these conditions any one could send him to sleep, awaken him and suggestionise him at will, although when the spectator acted without submitting to my influence, he had absolutely no influence on him." The article was moreover accompanied by an editorial note which stated that the researches of Dr. Baréty and the facts expounded were in entire disagreement with the doctrines which were becoming more and more prevalent in the scientific world and which the *Revue de l'Hypnotisme* had placed at the head of its programme.²

¹ Dr. Marot of Paris, in reply to a question sent by Dr. Crocq, junior, declared that he had repeated successfully some of Baréty's experiments : in particular, an object or a person being seen by the hypnotised subject when touched by the hypnotiser's finger disappearing from the subject's sight, when the finger no longer touched him. All precautions having been taken to avoid suggestions, the hypnotised subject could not perceive anything that was done and would speak without being questioned : *L'Hypnotisme scientifique*, by Dr. Crocq, junior, p. 308.

² *Revue de l'Hypnotisme*, 1888, p. 80. The article was accompanied by this very characteristic note. "The *opinions* (sic) uttered in this article by Dr. Baréty are in entire opposition to the ideas generally

However, in the following year (1889) the *Revue de l'Hypnotisme* published, and this time without comment, under the title, "Functional disturbances of the senses in Hypnotism," an article from Dr. Mesnet, in which the same observations were found, which we may summarise as follows : "The subject hears or does not hear a spectator according to whether he is touched or not by the hypnotiser."

The following is one of the most singular passages in the article :—

"I cease to question him (the subject Alix in somnambulism); I turn towards M. X., who was seated behind me, who had spoken to her several times in vain.

"I wish you to be witness of a very striking fact which you can test for yourself: but do not ask me for the explanation, because scientifically I cannot give it to you. Here is my left hand which I place behind my back at your disposal, and quite unknown to the patient; my right hand rests on that of the young girl; look upon me as a telegraphic wire which you use when you want to get into communication with her, touching with your finger my hand when you wish to speak to her. Do and act just as though I was simply the means of transmission between her and you.

"M. X. began the experiment. He put several questions to Alix, who did not hear and made no reply: when M. X. made the contact with my hands, she answered the questions which he put. The experiment was repeated twenty times, sometimes affirmative, sometimes negative, according to whether M. X. touched or did not touch my hand. Whether he lowered or raised the tone of his voice the results were invariably the same, agreeing on all points with the hypothesis which had regulated the conditions of

admitted to-day. The majority of our collaborators, to whom belongs the honour of having achieved such notable progress in these studies, deservedly give a preponderant part to suggestion in the production of the phenomena of hypnotism. We, therefore, leave to our distinguished colleague the entire responsibility of his communication."

this experiment made with her for the first time four years ago."

The same phenomena were observed by Dr. Mesnet in 1881 with another subject, Marie.¹

VII

The phenomena of the externalisation of sensibility, still imperfectly known, in spite of the remarkable experiments of Colonel de Rochas, whose name will for a long time be connected with this grand discovery, seem also to testify in favour of the conductivity of the psychic force, at least, judging from the facts I find in my notes of the experiments.

The subject with whom I then experimented (September 1892) was the young Pyrenean, Jean M., of whom I have already spoken :—

" I tried with the same subject the experiment of the transfer of sensibility from the operator to the subject by the intermediary of a glass of water; it was successful from the first. All the pinchings made on me were immediately felt by M. whilst he held between his hands the glass of water which I had previously held for a few moments between mine. The most curious phenomenon which I then observed was *the continuation of the transfer to other persons*. Mme. B., having taken hold of my hand, the pinchings made on her were transferred to the subject. We thus formed a kind of chain of four persons of which I was the first link; all pinchings made on any one of the persons forming this chain—which was outside the room in a corridor opening on to the staircase—were immediately felt by the subject, whom we perceived through the opening of the door, asleep in an arm-chair and writhing with pain each time one of us was pinched.

" I reproduced some similar phenomena with the

¹ *Revue de l'Hypnotisme*, 1888, p. 264.

same subject one evening in the presence of M. C., director of the primary school at A., and his family. M., having been put to sleep, I completely covered his head with a napkin, then when he had held a glass of water in his hands for a few seconds, I showed all the spectators that he immediately felt every contact which I had made on the glass. (It must be understood that I simply made the experiment without informing the spectators of the phenomena which would occur.) Mme. B., having touched the foot of the glass which I had replaced in the subject's hands, I observed, not without surprise, that she was in sensitive communication with him through this contact; because it was sufficient to touch her for the subject to feel the touch. We were able again to form a chain of which Mme. B. was the first link, touching the glass, held by M.; but this time again I had to break off the experiments because of the almost terrifying violence of the reactions manifested by the subject."

I was pleased to find the confirmation of these facts in the experiments recorded by Dr. Paul Joire of Lille in the *Revue de l'Hypnotisme* for January 1898.

"The subject put into the somnambulistic state, the glass of water was placed between his hands and charged with his sensibility, as in the first experiments. I then proved that he instantly experienced the sensation of pricking when I plunged the needle in the water. One of my assistants in these delicate experiments, M. Leuliette, kept his eyes fixed attentively on a chronometer, whilst the other two assistants signalled to him the exact time when I pricked the surface of the water with the pin, and when the subject's face expressed the sensation of pain. No appreciable time occurred between the two actions. I then made an assistant take the glass of water; he held it in his left hand and took hold of the subject's left hand with his right. We observed that a fraction of a second elapsed between the time when I pricked the water with the pin and the moment when the subject's face expressed the sensation. Then, making a chain of two or three persons, holding each other by the

hand, between the glass of water and the subject, I noticed a progressive delay in the sensation. With five persons I secured a delay of nearly two seconds between the time when the pin touched the surface of the water and the moment when the motion of the subject's face indicated that he felt the sensation."

VIII

Ochorowicz's work on *Mental Suggestion* and the publications of the Society for Psychical Research have, in recent years, drawn public attention to the phenomena of telepathy and thought communication; and it might have been thought that this group of psychical phenomena would at length deliver up its secrets to the curiosity of investigators. It does not, however, appear that we have made much advance in the knowledge of the mechanism by which they are produced. They doubtless lend themselves with difficulty to the application of the experimental method, except in comparatively simple cases, such as those which were the object of the ingenious experiments of Dr. Paul Joire (*Revue de l'Hypnotisme*, October 1897, "Mental Suggestion: New Experiments").

Is it by chance that we are never placed in the presence of telepathic subjects? Or is there necessary for the production of these phenomena a special predisposition which we do not possess? We must, at any rate, confess that we have several times tried to make experiments of mental suggestion or thought transference, and have only obtained negative results, even with subjects extraordinarily sensitive in all other relations.¹

We have, however, succeeded in producing a similar phenomenon, that is, sleeping and awakening at a distance,

¹ See, however, Chapter XIV, written at a later period than this.

with subjects not forewarned, by an effort of will more or less energetic and prolonged.

We shall find in the *Annales des Sciences Psychiques* for 1896, p. 56, the account of the first experiment of this character which we successfully tried with a subject almost unknown to us. Afterwards we produced this phenomenon on many occasions with Gustave P., and the *Revue de l'Hypnotisme* published the account of the experiments made with this subject.¹

However, it does not appear to us that these experiments can be considered as belonging absolutely to thought transmission for the following reason :—

Real transmission of thought consists in this fact, that the brain of A. when acting on the brain of B. raises up in the consciousness of B. the apparition of an *idea* or a series of *ideas* identical with those occupying at the same time the consciousness of A. But what my brain sent to the brain of Gustave P., in all the experiments I made with him, was not the *idea* of sleeping or waking, but a purely physical influence which produced sleeping or waking independently of all idea. This interpretation alone seems to us to be able to account for all the peculiarities of the phenomenon.

Thus, every time I endeavoured to make the experiments of mental suggestion properly so called, for example, transmitting to the waking subject the idea of a very simple act, such as raising the right arm, advancing the left foot, etc., the subject was impressed more or less rapidly by my state of cerebral concentration and nervous tension ; but he always reacted in the same manner, that is to say, going into the hypnotic trance. If I tried this class of experiment with the sleeping subject, he reacted, waking up again. But here is a most significant fact :—

It occurred to me once to try and put a young man to

¹ See Chapter X, where these experiments are reported.

sleep by an effort of will, a friend whom Gustave had brought with him, who had never been hypnotised, but whom I judged from his appearance to be very sensitive. Whilst the attention of both was entirely occupied with the conversation going on in the midst of a rather numerous company, I concentrated all my thoughts on Gustave's companion and mentally commanded him to go to sleep. He did not appear to feel my influence at all, but I saw this strange phenomenon produced : Gustave, whom I had not thought of, went to sleep, then he awoke, then he went to sleep again and awoke again, and so he went on indefinitely, as long as I continued the action.

It, therefore, seems that the effect produced by my will, or, rather, by the brain tension which accompanied it, was purely physical and independent of all communication or suggestion from the mind. The subject, being awake, this tension, in spreading itself so to speak towards him, he slept ; when asleep, it awoke him.

The interpretation which we may give to this phenomenon, however, is of little importance to the question we are considering. The principal point is to note that this phenomenon obeyed, like all we have hitherto discussed, the same law of *conductibility*.

I have several times invited various persons to try to send Gustave P. to sleep, or awaken him, unknown to himself, by an effort of will, under the same conditions that I had myself sent him to sleep : no one could succeed.¹ However, every time that these persons made contact with me, their mental effort was sufficient to awaken the subject if he was asleep, or to send him to sleep if he

¹ I ought, however, to add, in order to be quite exact, that, during one of these experiments, the subject spontaneously declared that he felt a sensation of vertigo ; it seemed to him that the furniture and walls were dancing around him ; and he at once accused me of having caused this sensation by some manœuvre which he could not explain. But the improvised operator experimented in vain, he only disturbed the mental condition of the subject without succeeding in producing sleep, unless he had contact with me.

was in a waking state, taking every precaution, we must repeat, in order that the subject might not guess by any indication the experiments to which he was submitted or their special circumstances.

IX

It remains now to show, in order to close our study of the series of effects of psychic force, that the power of influencing material objects at a distance can also be transmitted by conduction from one individual to another.

This power, we have never had an opportunity of personally observing,¹ still less of submitting to experiment. It seems, however, to belong most frequently, not, as those of which we have hitherto spoken, to operators, but rather to subjects, or, at least, to individuals, very similar, in many respects, to those subjects who are called mediums. It appears to be a much more rare and decidedly a more exceptional form of psychic force, and all examples which we here give relate to the medium Eusapia Paladino alone.²

¹ These lines were written before the séances with Eusapia described in Chapter XVII.

² We quote the following from Dr. Maxwell's *Metapsychical Phenomena*, a work which was published a long time after these lines were written, and which shows that other phenomena of the spiritoid order are also obedient to the law of psychical conductivity. It relates to "raps," that is to say, blows struck on furniture, walls, planks, etc. "Sometimes, in order to obtain raps, it suffices to touch the medium or to make a slight movement with the hand above the table, or simply to place the palm of the hand gently on the table: this is an excellent way to obtain clear, decided phenomena. The table must be moved away from the medium in such a way that contact is impossible. The observer puts himself beside the medium, takes both his hands in one of his own, and moves the other slowly over the table or even keeps it quite still above the table. Nothing is more demonstrative than this experiment. Let us remember I am speaking of experiments made in broad daylight." The same author says of the phenomena of the telekinesis: "It is not always the medium who

The attention of those who have experimented with Eusapia has, unfortunately, not been drawn to the phenomena of conductibility, and yet we think we can find in their experiments, strong presumption, if not decisive proofs in support of the conductibility of this particular form of psychic force.

There are, first of all, the instances in which Eusapia produced movements of objects at a distance, not directly, by holding her hand towards them, but by holding the hand of one of the spectators, on which she impressed the movements.

The following extracts are taken from the report of the experiments at Agnélas reported in the *Annales des Sciences Psychiques* for 1896.

Page 25. "M. de Gramont's hand was raised by Eusapia's hand and she held it above her head. Immediately the curtain, although far from this hand, moved above the medium's head.

Page 31. "Eusapia took M. Maxwell's right hand and brought it about half a yard above the table; the table oscillated and then raised itself on one side.

Page 46. "Eusapia, grasping with her two hands the hand of M. Sabatier, who was seated at her right, made some quick jerks backwards and forwards, as though to open the door of a cupboard, which was to her left, about a yard away, and behind M. de Watteville. The door of the cupboard immediately moved and produced some jerky and loud noises like those made by a door when

obtains the best results in the experiment I refer to, levitations and attractions of the table obtained without contact but by movements of the hand made at a distance. I have seen some experimenters obtain more marked movements than the subject himself. This is not generally the case, but the fact has not appeared to me to be rare. It is rather disconcerting, because those persons who manifest a force relatively greater than the medium's cannot obtain any supernormal fact when alone: the presence of a medium is necessary for the energy of their action to be manifested."

being forced but resisting because the lock was not undone."

Other cases follow, more significant, perhaps, in which Eusapia communicated by contact to the spectators the power she possessed of momentarily taking away the weight from a body.

I find an indication of it, somewhat brief, it is true, in the following passage from an article by Colonel de Rochas, relating to the experiments at Montfort l'Amaury (*Annales des Sciences Psychiques*, 1898, p. 165).

"At Montfort l'Amaury, as in other circles where she sat, the spectators generally put an end to the séance after two or three hours, because the medium was completely exhausted: the spectators broke the chain and gradually turned on the light. Eusapia then came out of the trance state by degrees, regained the use of her senses, and ended by resuming her normal condition. However, she was always strongly charged with psychic force, and it was then that, in full light, she produced some phenomena, which she often repeated several times to please the observers. For example, she would tell you to place your hand on the table, or the back of a chair, then she would place hers over it and raise it, then *your hand and the furniture below it would follow the movement and the furniture would thus remain suspended from your own hand for from forty to fifty seconds*,¹ until it would suddenly fall when Eusapia breathed a sigh of relief, as though she had ceased from a violent effort."

X

To sum up, psychical phenomena, studied as a whole from one end to the other, from the most simple and

¹ The experiment would be much more significant from the point of view of the conductibility of the psychic force, if the medium's hand, instead of being placed over the operator's hand, was laid on his shoulder.

common up to the most complex and rare, all appear to us to obey the same general law of conductibility.

What deductions ought we to draw from this ?

We look upon them as of two kinds. Those which have to do with the theory of psychical phenomena, and the conception that we may form of them ; the others, more important, perhaps, relate to the method by which they should be studied.

First of all, the conductibility of psychic force may enable us to explain the difference, hitherto inexplicable, which distinguishes subjects, individuals sensitive to the action of this force, from the rest of humanity.

It may doubtless be claimed that all men can be more or less influenced by psychic or magnetic force, as it is maintained that all are, although in various degrees, hypnotisable or suggestionisable ; but it is none the less true that, practically, some are found to be active or operators ; others, passive or subjects ; the greatest number neutral, at once inefficient and insensitive. What causes these differences ? More especially, whence comes it that a certain individual, submitted to the magnetic action, is influenced very quickly and deeply, whilst another, submitted to the same influence, even for a very long time, does not feel any effect ?

The obvious hypothesis which occurs to the mind is, that the first is, so to speak, open and permeable to this action, whilst the second is rather closed to it and in some way impermeable ; and we believe we may understand these two opposite conditions by imagining that the vital radiation of the first allows itself to be thrown back and penetrated by the stronger radiation of the operator, to which the second, on the contrary, opposes a resistance which equalises and annuls it. Such is the interpretation which for a long time we have almost unconsciously admitted.

But the phenomena of conductibility which we are

studying now suggest to us an entirely different interpretation.

The permeable, those that conduct the psychic action and allow themselves to be entirely traversed by it without resistance or waste of the force, are the active and neutral, in a word, the insensitive; on the other hand, the impermeable, those that receive the psychic action, arrest, retard, conserve and accumulate it in their own organism, where it thus finds time to produce all its effects, are the passive, the subjects.

The comparison with electricity is suggested.

Subjects, we may say, correspond with bodies which are bad conductors of electricity, to insulators; others, non-subjects, with bodies that are good conductors. As long as electricity on its passage only encounters good conductors, it crosses them, invisible, silent, without any sign betraying its presence; everything happens as though it had no existence. It is only when it alights upon bodies which are bad conductors that it is arrested and then accumulates, and it is then also that it manifests its existence by the most noticeable phenomena. If you make currents circulate in metallic wires, the calorific, luminous and other effects which you observe will be as much greater as is the resistance offered by the wires to the currents. In the same way, when an operator places his hand or makes passes over a normal individual, the magnetic or psychic force not meeting resistance, it is immediately conducted and dispersed in what we may call the universal reservoir of natural forces; but if, on the contrary, the same action is exercised on a subject, it will only make its way very slowly, doubtless because of the relative impermeability of the organism, and, consequently, it will accumulate there, it will be intensified up to the point of producing alterations and perturbations more or less deep and lasting.

This is only, as we said above, an hypothesis, but this

hypothesis is very logically deduced from the conductivity of psychic force and appears to us to be worthy of the labour of experimental verification.

A second consequence of the same law is that it explains to us why magnetic and psychical phenomena are rare and exceptional, whilst the force which produced them is, on the contrary, very widespread and almost continuously operating. In fact, since this force is naturally conductible, since it tends normally to pass through organisms, and, doubtless, also inorganic bodies, without producing sensible results, until it meets with a medium, more or less accidentally impermeable, where it can be arrested and accumulated, it follows as a general rule, that the effects of this force will appear to be rare and exceptional, although its action may be constant and regular. Here, again, comparison with electricity is unavoidable. Until we had succeeded in artificially producing and accumulating electricity, electrical phenomena were regarded as accidental, curious, and in some way as natural playthings; and yet we know well to-day that there is nowhere the production of any physical, chemical or biological phenomenon which is not accompanied by an electrical discharge. On both sides we have to do with matters connected with cryptoid phenomena.

Thus the objection falls to the ground that we have so often heard advanced, even by savants who believe themselves to be imbued with the true scientific spirit, to the study of psychical, or, to speak more correctly, psychomagnetic phenomena.

These phenomena, they say, are too rare, too transient too capricious, for us to be able to study them; from the moment that any experimenter cannot observe and reproduce them at will, always identical in the same conditions, they are null and a dead letter for science; they are not *scientific* phenomena, and he who claims to study them is by that action placed outside science;

he is unworthy of the name of savant. How is it that those that argue thus cannot see that it is just the work incumbent on science, to make the phenomena *scientific*, that is to say, to discover in them the general and invariable conditions, what Claude Bernard called their determinism, and that it fails in its mission by refusing to study phenomena the laws of which do not at first sight appear ? The whole question is to know if a phenomenon is real ; but from the time it exists, it is of slight import if it is rare or frequent, usual or exceptional, fugitive or durable, capricious or regular ; it *is*, that is sufficient ; therefore it is part of the natural order ; discover, if you can, the mechanism by which it is produced. When you have discovered this mechanism, the phenomenon will be scientific ; and you can then, if, indeed, the conditions on which it depends leave room for human intervention, produce it and reproduce it as often and as infallibly as you wish. In short, you complain that nature has not done your work for you ; that is to say, that it has not offered you for study phenomena already fully prepared, facilitating your observations and experiments. But the very example of electricity, also so capricious for the early savants who studied it, as we find by reading Priestley's *History of Electricity*, ought to be sufficient to convince you that the duty to undertake first of all, when cryptoid phenomena are called into question, is that of finding the means of making them observable and susceptible to experiment at will. Only, in order to find these means, it is necessary to look for them, or, at least, not to excommunicate from science those who do look for them.

But the knowledge of the conductibility of psychic force will not only enable us to resolve the objection theoretically ; it enables us to raise it practically, and it is particularly from this point of view that its importance seems to us to be extreme. It gives a method for the

observation and experimentation of psycho-magnetic phenomena in conditions of certitude and absolutely satisfactory exactitude.

Let us suppose a scientist who has proposed to study phenomena of this character, but who is incapable of producing them himself. He has tried in vain to magnetise or send to sleep by passes, to produce anesthesia or catalepsy by the pretended radiation of the hand, to suggest by thought alone, to move material objects at a distance; he has to be contented with seeing these results produced by individuals without scientific culture, who claim to produce them by virtue of a special, mysterious quasi-magical power. It is quite in conformity with the laws of human nature for this scientist to refuse to regard these phenomena as serious; indeed not to admit for one moment their reality; he would prefer to attribute them to trickery, fraud, secret connivances, or, more politely, to illusions, unconscious auto-suggestions; and, if he sees any other scientist devoted to their study, he will laugh at his ingenuousness or doubt his good sense. But if our colleague should claim to have also the inexplicable privilege of producing such phenomena, man of science though he be, he will find himself in great danger of being looked upon as a charlatan or fool.

But if the force manifested by such effects is conductible, that is to say, transmissible by contact from the one that possesses it to another who does not naturally possess it, it does not much matter whether an individual may or may not be capable of exercising it himself; if he does not possess it, he can always acquire it by conduction, and, consequently, be capable of personally observing and experimenting just as though he had it. We are, therefore, not compelled to believe the magnetisers or professional mediums on their bare word, or simply to assist as spectators at their experiments: if

the phenomena they show us are really the effects of psychic force, and not artifices usually more or less fraudulent, we ought to be able to produce them ourselves, without having anything else to do than for them to communicate to us by contact the force necessary for this purpose; and we can produce them in conditions which we shall ourselves determine, in such a way as to exclude all possibility of connivance or auto-suggestion, and to convince ourselves fully and definitely of their objective reality.

Thus the method of *experimentation by conduction* does, in some way, make psycho-magnetic phenomena come into the ordinary domain: they cease to be connected with the individuality of such and such a person; they become objects of observation and possible experiment for everybody; no one can be excused any longer from their study by a prejudiced scepticism.

It is particularly on the most complicated and obscure order of the physical series of phenomena, thought transmission, movement of material objects without contact, that this method enables us to throw some light.

So far as thought transmission is concerned, it is very plausible to admit that it supposes, amongst other conditions, a kind of preliminary adjustment between the operator and the subject, and that this adjustment itself is the result of a long mutual acquaintance. Hence, the first comer will not be astonished that he cannot, generally speaking, transmit his thought at the first attempt, even to the most receptive subject in the world, and that the intermediary of the usual operator may be indispensable. But, for this reason precisely, the phenomenon becomes very difficult to control. If I must communicate to this third person, first of all, the thought which I desire transmitted to the subject, who will assure me that there does not exist between him and the subject a system of prearranged signs, by means of which he can communi-

cate, unknown to the spectators, apart from all real telepathy ? In fact, that is just what happens in entertainments of so-called mental suggestion or thought reading.

It is therefore necessary, in order to avoid all suspicion of connivance or trickery, that the operator himself puts me into a condition so that I can directly transmit my thought by my own cerebral effort without compelling me first to communicate with him. In this case I should be quite certain that he does not reveal it to the subject by any system of signals, since he himself does not know it. But if, as we believe, thought transmission obeys the general law of psychical conductibility, it will be sufficient, in order to realise the phenomenon in conditions of irreproachable authenticity, that I get into *rapport* with the operator by contact ; the subject would only require, in order to understand my thought, to receive it through this customary medium. How can the reality of the fact of mental suggestion be doubted if it is possible for every one to verify it by so simple a process ?

It would be the same with telekinesis (movements impressed on objects at a distance) if, as many indications seem to compel us to believe, the force which is in play in this phenomenon can also be transmitted by conduction. When a medium, in semi-darkness, seems to impress movements on a material object without apparent contact, solely by gestures, a sceptic can always raise the objection that it is a "trick," which, owing to the dim light, has escaped the observation of the spectators, that there is some thread or hair which makes an invisible connection between the object and the medium's hands. Let us suppose the telekinetic force to be conductible ; it is, henceforth, the sceptic himself who, under the sole condition of being touched by the medium, will impress on the objects of his choice, certain movements which he can accelerate, retard, interrupt, recommence, or, in a

word, vary and direct as he pleases. We should be greatly surprised if, in such conditions, his scepticism would not be changed into a passionate desire to study experimentally all the circumstances of such a marvellous phenomenon.

We must therefore hope that future explorers will devote themselves to determining more completely than we have been able to do the extent and conditions of this great law of conductibility, the consequences of which seem to be so important to the study and explanation of psychical phenomena.

THE END

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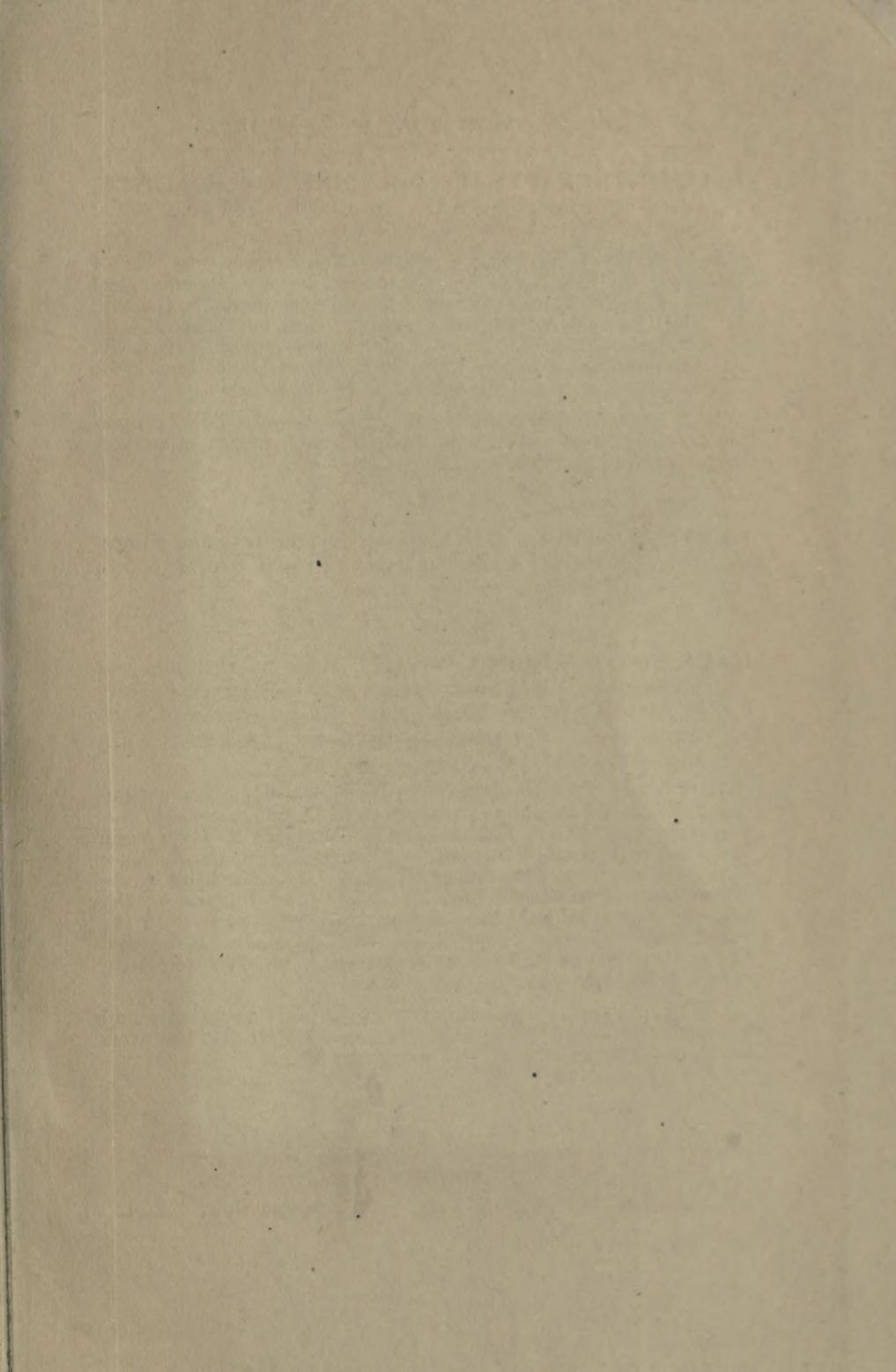
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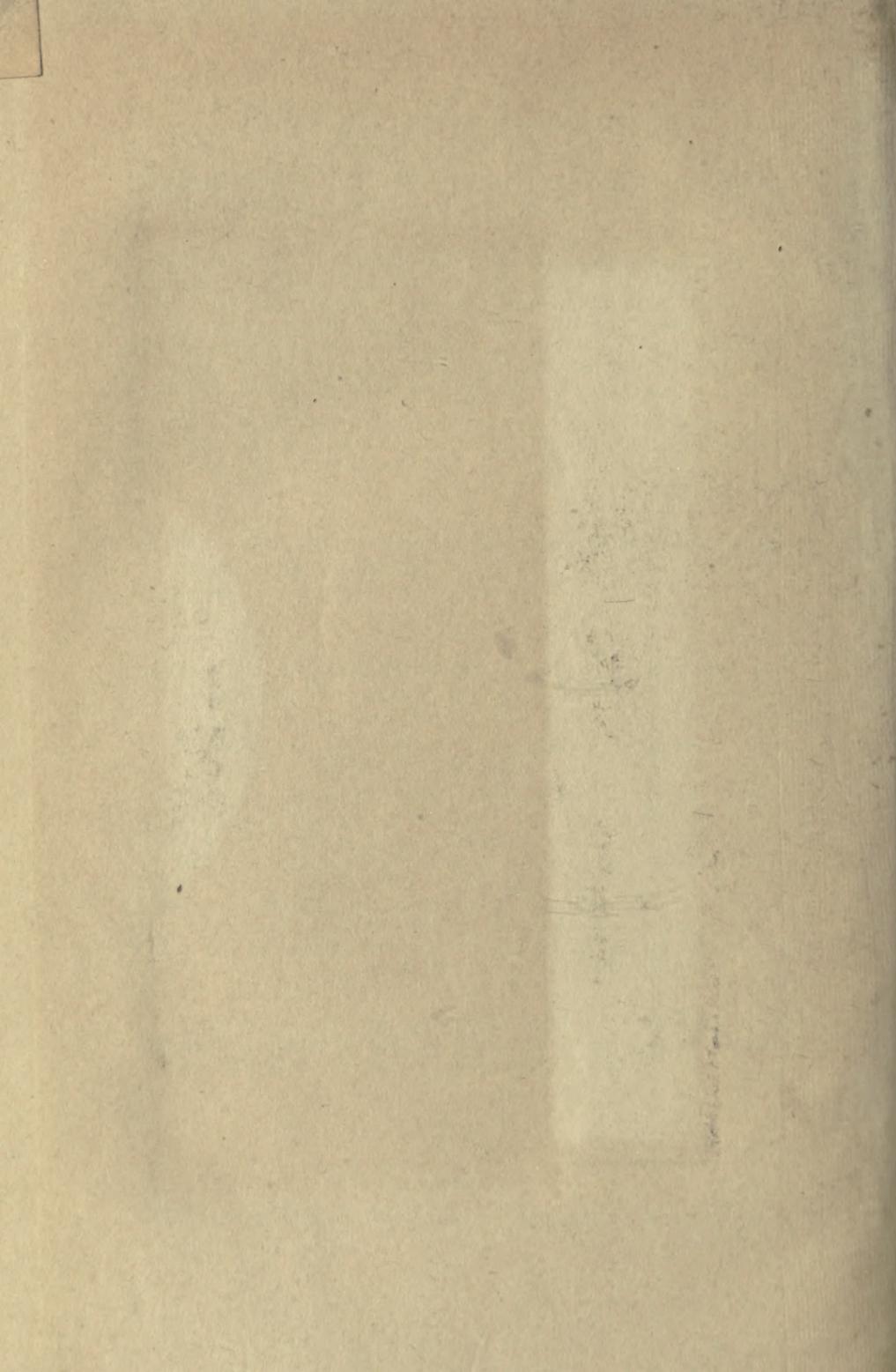
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